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A SURVEY OF A SERIES OF OBSTETRICAL COMPLICATIONS FROM THE RECORDS OF CHARITY HOSPITAL

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In the handling of puerperal infection the old methods of active local treatment, including intra-uterine douches, repeated curettages, and even radical abdominal operations on the tubes, ovaries and uterus have been largely superseded by a more conservative method, which includes strict non-interference except on specific indications, the avoidance of intra-uterine manipulations of any sort, the limitation of surgery to the opening of pus collections, symptomatic treatment, and the employment of routine measures to build up the patient's general resistance. Unfortunately, however, these new principles are not as generally applied as they might be in spite of the fact that statistics have long since proved that the old radical methods result in a most distressing mortality and morbidity.

It is not my intention to review the etiology and pathology of puerperal sepsis in this paper, but there are a few facts, now generally accepted, which I think might well be emphasized again:

1—Puerperal infection is really a wound infection, which is primarily a local process due to bacterial invasion, and whose outcome varies according to the reaction of the tissues, the virulence of the invading organisms, and the general resisting powers of the patient.

2—Many cases formerly regarded as merely local infections are true blood stream infections.

3—Many bacteria formerly regarded as purely saprophytic are now believed capable of living in the tissues.

4—Any infection of the genital tract, no matter what its type, is capable of becoming a general systemic infection.

The old radical methods of treatment were based upon gross pathology, with an entire disregard of the methods of bacterial invasion. The new methods recognize that the principles of bacteriology and pathology have a general application no matter what structure of the body is concerned. When the infection is localized, as for instance in the various types of endometritis, nature has established a protective mechanism and here as elsewhere excessive manipulation will simply break down this established protection and convert a strictly localized process into a true blood stream infection. On the other hand, when once the infection has passed beyond its local stage and becomes a systemic affair, no amount of local treatment will have the slightest effect. It is evident, then, that in neither type of infection is local treatment indicated: in the local process it is unnecessary because it is harmful, and in the systemic type it is unnecessary because it is useless. It is upon these main principles that the newer conservative methods of treatment are based.

For the last ten years there has been provided at Charity Hospital a ward on the white female service to which are assigned all cases of frank or suspected pelvic infection originating during pregnancy or the puerperium, including cases delivered outside the hospital and infected puerperal cases from the inside obstetrical service, as well as the various incidental and accidental complications of pregnancy. It can be readily perceived that a great variety of conditions and complications will be met with in such a service, and it has occurred to me that a review of the cases over a

given period of time would be of considerable interest, particularly as during the entire time the ward has existed no radical treatment of any sort has been employed and only a strictly conservative policy has been followed. The cases cover a period of three years and for convenience in grouping I have classified them as abortions, premature labors, puerperal cases, and incidental and accidental complications of pregnancy. Cases transferred from the gynecological service for a period of rest before operation are also handled in this ward, but they have not been included in this survey. They were practically all cases of inflammatory disease and present no features of special interest. The only treatment was absolute rest plus whatever symptomatic treatment was indicated.

The treatment of abortions, premature labors and puerperal cases naturally varies in some details, but in general the following routine is strictly observed:

1—Immediately on admission a careful general examination is made to exclude intercurrent disease and constitutional disorders, and a routine urinalysis is done, together with blood count and Wassermann.

2—A detailed pelvic examination follows, repeated at 48 hour intervals if the patient shows signs of infection. A temperature of 100.5 on admission or developing after admission and persisting for more than 24 hours is regarded as definite evidence of infection.

3—If abortion or delivery is inevitable it is conducted in the most conservative manner possible, operative measures being employed only on the strictest indications, and a careful asepsis being observed.

4—If the uterus is well contracted and the cervix closed, no attempt is made to invade the cavity, even for the collection of smears. The strict observance of this principle will explain the relatively small number of positive intra-uterine cultures in this series. We feel that such knowledge is largely of prognostic value, and that the danger of intra-uterine manipulations more than counterbalances its usefulness. Moreover, a well contracted uterus rarely if ever contains debris, and if it does, in the majority of cases it will eliminate it by natural forces.

5—If the uterus is soft and boggy, the os patulous, and portions of placenta, membranes and blood clots are protruding, they are removed with the finger or sponge forceps, but preferably the finger, in order to establish drainage. Hemorrhage usually ends with their removal.

6—In incomplete abortions sufficient time is allowed to elapse for the uterus to empty itself. It is surprising how many of these cases will terminate naturally if they are let alone and pituitrin and ergot are used to aid in the contractions. If the hemorrhage is severe a firm vaginal pack is employed, and is usually followed by the discharge of the remaining secundines. This is particularly true of criminal abortions. Even if there is definite evidence of debris in the uterus we think it wiser to defer active measures until all signs of infection have subsided; if bleeding demands interference the pack is usually all that is required.

7—Under no circumstances is the curette used in our service and intra-uterine irrigations are practically never permitted. We have found that the routine employment of both these measures leads to severe reactions and often gives rise to a temporary bacteriemia or even a general systemic infection.

8—In missed abortions the case is left to nature unless definite septic indications demand interference. It has been my experience, not so much in this ward, where the number of cases was small, as in my private practice, that the majority of such cases will complete themselves spontaneously. If evacuation of the uterus is definitely indicated, the introduction of catheters or a firm vaginal pack, with a slight packing of the cervix, will ordinarily precipitate uterine contractions, and the case may then be left to nature or the delivery be completed according to the routine obstetrical indications. Routine active treatment, including manual dilatation and curettage, often gives rise to surprisingly grave complications including hemorrhage, high temperature, and even septicemia.

9—Blood cultures are made in all cases of frank or suspected septicemia at the height of temperature following a chill, and are repeated at regular intervals. Positive cultures resulted in a very small percentage of cases, even where every clinical symptom pointed to an overwhelming septicemia. These results largely parallel those from other clinics, and it is difficult to say just where the fault lies.

10—Vaginal douches are not employed except in parametritis and other exudative conditions. The necessary manipulations simply add to the discomfort of the patient

and their routine employment may even be productive of harm.

11—Pus collections are evacuated through the vagina or at Poupart's ligament according to indications, but no other surgery is permitted. Exudative processes are never opened. Tubo-ovarian abscesses are transferred to a gynecological service after the acute symptoms have subsided.

12—Serums and vaccines have been used in a fair percentage of cases, but the results have practically always been disappointing. The same may be said of blood transfusions. Beyond severe constitutional reactions and possibly some slight temporary benefit their results in this clinic have been negligible.

13—Our general treatment includes absolue rest in all cases, with Fowler's position to favor drainage. Opiates and sedatives are used sparingly as indicated, and the ice cap is used over the abdomen for pain. Temperature is controlled by ice caps, cold sponges, possibly cold rectal irrigations, but never antipyretics. Nourishment is given at frequent intervals, and in severe cases of sepsis or anemia the fluid balance is maintained by saline and glucose drips, hypodermoclysis, and infusions, sometimes of the continuos type. The patient is kept in the fresh air and sunshine as much as possible, and other symptomatic treatment is employed as the indications arise.

I have quoted from the statistics at considerable length, even at the risk of monotonous repetition, because the real value of conservative treatment cannot be appreciated unless it is realized in how grave a condition many of our patients came to us. Over 50 per cent, for instance, entered with temperature over 100.5, the dividing mark between infected and non-infected cases, and elevations from 104 even to 107 were relatively frequent. A large number, too, were subjected to manipulations of the gravest character on the outside, and questioning showed that in many instances not the slightest attempt at asepsis was made. The complications which followed illustrate very well the course of a pelvic infection which has been either neglected or treated by ill-judged methods, and our results prove the value of conservative treatment even in the most extreme cases.

Abortions

1—Inevitable—16 cases. All of these patients were admitted with the cord prolapsed, the membranes ruptured, or some extremity presenting, therefore the only possible treatment was to aid the delivery. Four cases delivered spontaneously, 11 were packed, and in one (6 months pregnant) a bag was introduced and version done for hemorrhage. Two of the feti were macerated, and one child lived for 30 minutes. Two of the mothers had positive Wassermans. Eight patients were admitted with temperature over 100.5, but in every instance the infection must have been of a mild type as this series gave rise to no complications and no mortality.

2—Incomplete abortions—125 cases. The age and parity are unimportant but it is interesting to note that one patient gave a history of 5 still-births and 7 abortions and was unmistakably syphilitic. Hemorrhage of more or less degree was present in every case; 7 of the patients had had one or more chills and 7 were admitted in a state of shock, in 2 the pulse being imperceptible. Sixty-three had temperature over 100.5, and in 26 cases it ranged from 102 to 105. Twenty-eight admitted definite manipulations on the outside (it is probable that many of these cases were of the criminal type), including repeated examinations by midwives, packs, vaginal an intra-uterine douches and curettements. In 6 cases the hemoglobin was below 45, 4 patients had positive Wassermanns and 2 positive smears, and one urinalysis showed 8 percent of albumin. In one instance the uterus was almost completely prolapsed. The blood culture was positive in only 2 cases, the infecting organism being colon bacillus. The uterine cultures were positive in 5, the organisms including colon bacillus, streptococcus, gonococcus, and 2 mixed infections. In 3 cases the placenta was luetic and there were 6 macerated children. Thirteen and six-tenths per cent of this series developed complications, including, besides 6 cases of septicemia, salpingitis, cellulitis, thrombophlebitis, peritonitis and broncho-pneumonia. Accidental complications included tonsillitis, malaria, ovarian cyst, epilepsy, pyelitis, and one complete tear. The mortality was 0.

3—Complete abortions—84 cases. Three of these patients were admitted in a state of shock, 14 were bleeding, 5 had had one or more chills, and 1 had an acute retention of urine. Thirty had temperature over 100.5, 23 being between 102 and 105. Treatment outside included repeated examinations, packs (one patient was packed 4 times), vaginal and intra-uterine douches,

and curettements (one patient was curetted twice and another 8 times). Eight had positive Wassermans, 3 positive smears, and one had both. One patient had sugar in the urine. In 2 instances the placenta was luetic, and there were 8 macerated feti. Only one blood culture was positive, staphylococcus, and 5 uterine cultures were positive, including gonococcus, staphylococcus and colon bacillus. Twenty-two and six-tenths per cent developed complications, including, besides 2 cases of septicemia, salpingitis, parametritis, thrombophlebitis, cellulitis, oophoritis, peritonitis and tubo-ovarian abscesses. Malaria was the only non-obstetrical complication. The mortality was 0.

4—Criminal abortions—44 cases. The means included drugs, douche nozzles, instruments of various sorts, elm sticks, catheters, packs, intra-uterine douches, and rupture and extraction. Three patients were admitted in a state of shock, 20 were bleeding, 3 had had one or more chills, and in one instance the cord was broken and the cervix lacerated. Twenty were of the complete type and 24 were incomplete. Three patients had positive Wassermans and 3 positive smears. Six feti were macerated and there was one luetic placenta. Twenty-nine patients were admitted with temperature over 100.5, and in 24 instances it was between 102 and 107. There were no positive blood cultures and but 2 positive smears, gonococcus and staphyloccus. Twenty-five per cent developed complications including, besides 8 cases of septicemia, salpingo-oophoritis, pyosalpinx and pyelitis. The mortality was 4, 9.1 per cent, all cases of septicemia, complicated by peritonitis and lobar pneumonia in one case, typhoid and acute nephritis in another, parametritis in the third, and peritonitis in the fourth. As the last case was admitted moribund and died within 24 hours, the corrected mortality would be 6.8 per cent for the series.

5—Threatened abortion—27 cases. Three of the patients had temperature from 101 to 104 and 4 had positive Wassermans. Complications included oophoritis and hookworm. It might be pointed out in this connection that while hookworm is a relatively infrequent complication of pregnancy it is a very serious one because of the extreme anemia and impoverished condition it brings about. All of these patients were discharged with their symptoms relieved and every indication that the pregnancy would continue to term. The mortality was 0.

6—Missed abortions—7 cases. All of these patients gave a typical history, definite objective and subjective signs of pregnancy, then a decrease in the size of the abdomen, but no re-establishment of the menses. Three were admitted with fairly severe hemorrhage, and 2 with a foul yellowish discharge. Two had definite septic symptoms. The mortality was 0.

Premature Labors

1—Threatened—3 cases. One patient had a positive Wasserman. Under routine treatment all symptoms disappeared. The mortality was 0.

2—Actual—22 cases. Two of these patients had delivered themselves on the outside without assistance, one sustaining a complete tear involving the cervix, perineum, urethra and vulva. Another case, delivered by a midwife and complicated by placenta previa, also had a complete tear. Two patients had had repeated examinations and one had been delivered by forceps. Fourteen were admitted with temperature from 100.5 to 104. There were two positive blood cultures, one staphylococcus and one mixed, and one positive uterine culture, gonococcus. Forty-one per cent developed complications including, besides 6 cases of septicemia, only cellulitis. The only non-obstetrical complication was tuberculosis. One patient died, a mortality of 4.5 per cent, of salpingitis, parametritis, peritonitis, and lobar pneumonia. Two patients ran high temperature for 39 and 45 days.

Puerperal Cases

1—Admitted from house service—11 cases. Seven of these patients were admitted in labor and had had some sort of manipulations on the outside. The mode of delivery included one Caesarean section and two manual extractions of the placenta. The complications included lobar pneumonia, phlegmasia and septic endocervicitis. Eight of the cases ran a low temperature for several days which then disappeared without any local or general manifestations, and which was evidently due to a mild infection with attenuated bacteria, probably limited to the endometrium.

2—Admitted from outside—91 cases. Thirty-seven patients had had one or more chills, in 22 cases complicated by severe pain, and 8 were admitted with sharp

hemorrhage. Three had had one or more convulsions, 5 were admitted comatose, and 15 had lochia of a very foul character. That is, 72 of the 91, 79 per cent, had definite symptoms of some sort of infection. In 67 cases the temperature was over 100.5, and in 29 cases it ranged from 104 to 107. Twenty had been repeatedly examined, 22 had been delivered by forceps, 3 by version and one by craniotomy, and in 3 cases the placenta had been extracted manually. One patient had been unconscious since the onset of labor and delivery had been effected instrumentally while she was in that condition. One patient gave a history of a tub bath and coitus in the first stage. In one case, verified by the hospital scales, the baby weighed 13 pounds. Seven children were stillborn and there were 7 positive Wassermans. The white count, as was to be expected in infections of such severity, was frequently high, in one case reaching 51,500. In 6 cases the hemoglobin was below 50. Seven urinalyses showed albumin ranging from 5 to 50 per cent. Blood cultures were positive in 9 cases, staphylococcus in 7 and streptococcus in 2. The intra-uterine cultures were positive in 6 cases, including streptococcus, gonococcus and 2 mixed infections. The purely obstetrical complications included, besides 28 cases of septicemia, sub-involution, infected tears, cellulitis, thrombophlebitis, septic endocervicitis and endometritis, phlegmasia, salpingitis, pyosalpinx, psychosis, terminal broncho-pneumonia, dislocated symphysis (this patient delivered a 13 pound child), intraligamentary abscess, parametritis, broad ligament tears, pyometra, post-partum hemorrhage, and breast abscesses (staphylococcus). It is interesting to note that this group contains a large number of eclampsia cases, which serves to call attention again to the increased susceptibility of eclampic women to infection, partly owing to lowered resistance and partly owing to the radical methods of delivery so often employed. Non-obstetrical complications included mitral stenosis, fibroids, acute arthritis, toxic multiple neuritis, diarrhea, hookworm (2 cases), tuberculosis, cystitis, pyelitis, pleurisy, osteomyelitis (staphylococcus, colon bacillus and gonococcus), bronchitis and malaria. Two patients ran high temperature for 40 days, and 9 from 50 to 75 days. The mortality was 11, 12.1 per cent. Four were admitted moribund and died within 24 hours, giving a corrected mortality of 6.8 per cent. Four deaths were due to septicemia, complicated by lobar pneumonia (2 cases), acute anemia, and 3 postpartum hemorrhages in the same patient. Five patients were admitted comatose and died within a few hours or days, in the majority of cases from acute nephritis or eclampsia. The two other deaths were due to puerperal psychosis of the infectious type.

Incidental Complications of Pregnancy

1—Pre-eclamptic toxemia—11 cases. These were mainly neglected cases, the blood pressures ranging from 190 to 270 and the albumin from 8 to 50 per cent. One patient had temperature 107 on admission. One was admitted in labor 2 went into labor spontaneously, and upon other indications or after the routine conservative treatment had failed to secure results, labor was induced in the remaining cases by packs and catheters. Eight children were stillborn and one was macerated. The complications in this series were unusually severe and included placenta previa, 2 premature separations of the placenta, one case of chronic nephritis and one of hookworm. The mortality was 2, 22.2 per cent; one patient was admitted moribund and died 6 hours later, giving a corrected mortality of 11.1 per cent. The other death was due to broncho-pneumonia following placenta previa.

2—Vomiting of pregnancy—32 cases. As this series of cases has recently been reported in the *Journal* in some detail by Dr. Hilliard E. Miller (May, 1924), I shall not go into them again, simply stating that they gave the most uniformly unsatisfactory results we have to record. The gross mortality was 6, 18.8 per cent, and the corrected mortality 15.6 per cent. I should like to point out again that in many of these cases had therapeutic abortion been permitted at all, or permitted earlier, the outcome might have been different, but the patients, because of religious scruples, rejected the proposal to empty the uterus, and the delay should be charged to that fact and not laid at the door of the staff.

3—Placenta previa—7 cases. Most of these patients were admitted after outside manipulations and after the loss of large quantities of blood. They were all delivered by packs or bags followed by version, except one case on whom Caesarean section was done; this was the only case in which the child was born alive. The complications included thrombophlebitis, psychosis, and one case of septicemia. This patient's temperature ranged to 105 and

was not normal until the sixty-second day. Two patients died, a mortality of 28.6 per cent. One died suddenly an hour after version was done, and the other had a psychosis of the infectious type. It might well be pointed out here that the mortality of placenta previa will never be materially reduced until it is generally appreciated that the condition is one of such gravity that immediate termination of the pregnancy when once the diagnosis is established is the only conservative course, and that the proper place for treatment is the hospital and not the home.

4—Premature separation of the placenta—2 cases. Both patients were delivered by version and extraction, one baby being stillborn and the other dying on the eighth day. One of the patients had a positive Wasserman. Both were admitted with high temperature, 102 and 105; the latter developed septicemia, with bacillus pyocyaneus the infecting organism. The mortality was 0.

5—Ectopics—6 cases. All were transferred to the surgical service, where the diagnosis was confirmed on operation. The mortality was 0.

6—Hydatiform mole—4 cases. All were admitted with severe hemorrhage and temperature from 102 to 104. One patient apparently had pernicious vomiting also, and a hemoglobin of 40. All were treated by curettage, followed by transfusion in the case of anemia. The mortality was 0. Three of these patients have been followed up from 2 to 4 years, and have had no after effects.

7—Kidney complications—12 cases. In one case of pyelitis the disease was preexistent. The routine measures were employed, kidney lavage being necessary in 3 instances. One case of pyelonephrosis ran high temperature for 55 days. The mortality was 0.

8—Displacements—4 cases. Two were admitted with symptoms of threatened abortion and 2 with incarcerated pregnancies, in one case accompanied by acute retention of urine and temperature 104. All were treated by reposition and the pessary. One of the patients had typhoid fever at the time of admission, and aborted at 5 month at which time a lateral placenta previa was diagnosed.

9—Minor complications included 2 cases of gonorrheal vaginitis and one of pruritis.

In all there were 85 cases in this series with a gross mortality of 10, 11.9 per cent, and a corrected mortality of 9, 10.6 per cent.

Accidental Complications of Pregnancy

There were 45 cases in this group, including ptomaine poisoning (1, positive Wasserman); carbuncles (1); breast abscess (1); appendicitis (3); cholecystitis (1); tuberculosis (2, abortion advised and refused); hookworm (1, positive Wasserman, hemoglobin 50); femoral hernia (1); chronic nephritis (2, one positive Wasserman, one stillbirth at 8 months); cystitis (9, one positive Wasserman); otitis media (1); chronic cardiac valvular disease (1, complicated by mitral stenosis, renal disease and tuberculosis; died during induction of labor); 17 other cases admitted for various minor symptoms such as indigestion, constipation, etc. The mortality was one, or 2.2 per cent.

In every instance the treatment was adapted to the condition as if it had occurred in the non-pregnant woman. None of the surgical complications were severe enough to demand operation, but it is our policy, as a general rule, to operate on the pregnant woman whenever her condition seems grave enough to justify it.

Summary

There were 299 cases of abortion with a gross mortality of 4 and a corrected mortality of 3, or 1 per cent; 25 premature labors, with a mortality of 1 or 4 per cent; 102 infected puerperal cases with a gross mortality of 11 and a corrected mortality of 7, or 6.8 per cent; 85 incidental complications of pregnancy, with a gross mortality of 10 and a corrected mortality of 9, or 10.6 per cent; and 45 accidental complications, with a mortality of 1 or 2.2 per cent. In all, exclusive of rest cases, 556 cases were admitted to the ward during the three year period, with a gross mortality of 27 and a corrected mortality of 21, or 3.8 per cent. Four hundred twenty-six of these cases were either postabortal or postpartal, and the corrected mortality in this series was 11, or 2.6 per cent.

Conclusions

1—These figures are naturally higher than they would be in a well conducted private practice or in a private hospital, but they are extremely low for a large public hospital, where the patients are frequently admitted after meddlesome interference and ill-judged maneuvers by ignorant and dirty midwives and careless practitioners, and often in extremis. Certainly they are materially lower than the

10 to 15 per cent mortality which was the rule under the old radical treatment.

2—They illustrate very well the value of intelligent pre-natal care and the necessity of educating the mass of the people to it. Particularly in the toxemic and placenta previa cases neglected patients furnished the largest part of the mortality.

3—The figures also show the need for further education of midwives and even physicians. They need to be taught the simple principles of asepsis, and it cannot be emphasized to them too often that intra-uterine manipulations are without their province and that the place for operative procedures is the hospital.

4—Such a ward as this is not only of value in that it makes possible a correlated treatment of obstetrical complications, so to speak, but it is of inestimable value as a teaching center, as it permits the study of a wide range of obstetrical complications which might not be met with in years of individual practice, with every facility for clinical and laboratory investigation, as well as the supervision of an organized staff of specialists in this particular field.

NERVOUSNESS

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Psychology deals with the individual's responses and relations to his surroundings and its object is the interpretation of the expressions of human behavior. Academic psychology is concerned with the examination of the course of thinking and medical psychology examines thought effects and other factors comprising the entire mental situation. Psychological investigation is of inestimable value and has given tremendous impetus to the study of mental disease.

To each person there are two considerations of vast importance; first self and second everything else, environment or reality to which he reacts physically with respect to such things as food, wearing apparel, climate, injury and disease and mentally by adjustment to social customs and situations both agreeable and disagreeable. Mental hygiene is preventive medicine in so far as it applies to psychological manifestations and its application is directed to the initiation and maintenance of correct habits and adequate, effective individualistic adaptation and accommodation.

In the sequence of biological development the human mechanism is occupied with the necessity of functioning to achieve various results and the periods, during which such specialized endeavor is accentuated, are referred to as levels. For example, in early life growth is particularly stressed and the epoch is termed the physiological level. Later arises the necessity for more extensive and precise coordination of complex bodily activities and this is effected chiefly by the nervous system and the level of the central nervous system is reached. The psychic level is that of which thinking, ideation and other intellectual faculties are the type of expression. And at the social level, the reactions and manifestations of the psychic or psychological level acquire social values. The various levels are, of course, not distinctly delimited or separately represented in epochal limitations.

Inasmuch as environment is reality, there is no complete, safe or satisfactory escape from it and the establishment and preservation of an enduring, harmonious relationship is a prerequisite to one's wellbeing and best interests. Failure at any level is exhibited in alteration of physical and mental functions; default at the psychic or social levels implies faulty adjustment and the display of the reactions and responses, dependent thereon, is largely the condition to which we apply the term nervousness.

Therefore, it can be readily appreciated that nervousness is not a separate and distinct disease entity with clearly defined symptoms and easily elicited causes in each instance or a uniformly outlined course. It is not, in itself, disease of the brain or body; nor is it exhaustion, poi oning, fatigue or weakness of the nerves; but it is a type of reaction to physical or mental maladjustment, subtle, extensive, far-reaching and often disastrous in its effects, though almost invariably preventable and curable.

Persons, mentally or physically unfit, are unable adequately and effectively to respond to the exigencies of their environment and in dealing with nervousness we are confronted with individuals who are inadequate and inefficient and whose problems are rather distinctly personal. In supporting this theory one risks the implication of attributing nervousness to sel-

fish motives; selfishness is quite a common human trait, the origin of which is found in the fundamental and controlling group of desires related to the instinct, self-preservation, which implies keeping that which we acquire to enlarge, enrich, protect and preserve the self.

The causes of nervousness are infinite in number and variety. Those of prenatal or congenital origin are disclosed with difficulty and may not deserve the designation, hereditary; Dr. Oliver Wendell Holmes' Elsie Venner may serve as an illustration. Post-natal or acquired causes include such mechanical defects as tight clothing, faulty posture and deformities as flat-feet, bowlegs and knock-knees. Physiological causes are unhygienic conditions as defective ventilation, lack of proper food, sleep, rest recreation; puberty, menstruation, menopause, senescence. The home and family is to be seriously considered and often has much to do with early impressions and experiences, habit formation, discipline and training. Also to be included are structural disease, injury or malformation of the nervous system; poisons as alcohol, lead, arsenic; disease as syphilis and arteriosclerosis which may interfere with the proper distribution of blood to the tissues; injuries sustained during birth and later head injuries; hydrocephalus and microcephalus. Also producing effects are such constitutional diseases as pulmonary tuberculosis, heart and kidney conditions and altered states of the glands, pituitary, thyroid, thymus, adrenals and gonads. Stimulants and drugs as alcohol, tea and coffee, opium and cocaine are believed to play a very important role as causes; however, it is generally and perhaps correctly thought that the necessity for stimulants and drugs is created by reason of the individual's apparent need, in many instances, rather than to regard them as being responsible for nervousness. Injury or traumatism of the body or nervous system is to be given credit as a cause.

It would seem quite probable that practically all of these causes act largely in a physical manner but, at the same time, they must of necessity produce effects in the mental sphere as well. It is admitted that every physical change, experience or stimulus is represented in concomitant mental impressions and reactions and it is also held that the reverse is true, as evidence of which is the blushing of shame, the blanching of terror and the increased heart action and respiration accompanying fear.

Then there are influences which act more especially in the psychic or mental sphere so-called psychogenic or psychic factors. Included here are the reactions to fundamental instinctive tendencies and emotional states and conflicts. Also self and race preservation urges, sex urges, maternal instincts. The effects of fear, anger, disgust, jealousy, love, hate; the desire for power, freedom, security, happiness, adventure, change, companionship, wealth. In other words, our wishes, desires, cravings and yearnings on the one hand and our capacity to achieve and maintain them on the other.

Impairment or disease either of structure or function lowers the threshold and lessens the individual's protective and repressive powers and offers favorable soil for the development and progress of mental and nervous ailments. In the state of lowered resistance the normal or customary inhibitions are released; and ideas, thoughts, desires truly expressive of the real self, and which were previously controlled or repressed, arise and to this is attributed those unusual, peculiar or irrational exhibitions of personality alteration so often observed in those who are mentally distressed.

The seemingly amazing number of manifestations of nervousness are limited in variety only by the limit of one's knowledge, experience and ability to produce them by efforts of the will. Mental functioning is invariably accompanied by certain conditions of consciousness or awareness, termed affects or feeling tones both pleasant or unpleasant, pleasurable or painful, agreeable or disagreeable and affects are expressed in emotions. An emotion is an inseparable part of its instinct and an instinct depends on its emotion for expression. An instinct is a tendency to react in a certain predetermined manner to specific circumstances. A passion is an intense emotion of relatively brief duration as terror, anger, revenge, triumph. A mood is a moderate emotion of longer duration as optimism, pessimism, contentment, despair, despondency. When a mood continues, dominating one's personality, it becomes a temperament. That bodily and mental processes are closely interrelated and inseparable is undeniable.

Manifestations or features characterized as symptoms of nervousness are irritability, emotional excess as too ready excitement, depression, joy, anger tears and too

easy mental and physical fatigue with extravagant expression of feelings over trifles; indecision and lack of ability to concentrate or to think; irrational fears and unjustifiable worry; oversensitiveness to light, sound and the opinions of others; tendencies to intensiveness, hurry and rush. Evidence of increased nervous tension as feelings of stress, strain, anxiety, uneasiness, panickiness, discouragement, loss of self-confidence with numerous seemingly uncontrollable and conflicting thoughts. Dizziness, headaches, fidgetiness, jumpiness, jerkings with useless energy wasting body movements, twitchings, wringing of hands, nail picking and biting, finger and lip sucking, trembling. Loss or disturbance of sleep is frequent as are ideas of uncertainty, incapacity, imperfection, inferiority, helplessness, incompleteness, strangeness, impulsiveness, impatience; personal and spatial disorientation. And not infrequently the appearance of such exhibitions of illness is marked by more or less definite personality alteration and the affected individual develops excessive and morbid concern regarding his physical and mental health. The self is threatened with annihilation and the consequent emotional fear response is a frantic effort at self-preservation regardless of cost even to others; and attendant is the appearance of uncontrolled selfishness, self-pity, craving for sympathy, irresponsibility; reliance on the soothing and calming effects of stimulants or narcotics is often resorted to and social parasitism results.

Fortunately, the problems presented seldom fail to offer the prospect of satisfactory prevention and complete recovery for we are often dealing with material which in itself is sound but has simply been improperly and unwisely directed and managed.

Determination of the nature and extent of a malady is the domain of diagnosis and one's skill in this field is dependent on his ability to elicit and interpret the manifestations and to assign to each its relative and collective worth in the total evaluation. Imperative is the necessity for intimate acquaintance with normal and abnormal psychology, human behavior, ethics and thorough familiarity, with general medical science. While brilliant diagnostic exhibitions are not required, the importance of accurate diagnosis cannot be overemphasized, not alone for statistical purposes but because it depends on the application of fundamentally sound and correct scientific reasoning and precise, painstaking methods of observation and investigation and unfailing vigilance to the end that successful preventive and restorative measures can be instituted.

The profound importance of preventive measures is obvious; it is essential that elemental causative factors be understood and efficient, intelligent and persistent efforts be directed to their eradicaion or modification.

Prenatal causes require, for their elimination, education, care and protection of prospective mothers. In the postnatal group, parental enlightenment and correction of physical ailments with improvement of hygienic and environmental conditions is essential; food, rest, work, play, habits and disciplinary measures demand attention. Structural disease of the nervous system and body as a whole should be subjected to early, rigid and intelligent study and suitable treatment instituted. The use of stimulants and drugs must be summarily dealt with. Injuries, and especially head injuries, are to be subjected to most careful scrutiny before being ignored or considered as trivial.

It is to be remembered that instincts depend on emotions for expression. Failure of proper growth and development, persistence of infantile habits and behavior or the onset of any peculiarity or character alteration necessitates a carefully explained, calmly conducted diligent search and investigation. Children possess few or no preconceived ideas or correlated experiences and they acquire much knowledge by suggestion and imitation and the origin or basis of many of their oddities may be revealed by a careful examination and observation of other members of the family. Emotions exert a profound influence over energy production and distrbution and it is of the utmost importance that they be understood, fully explained and properly guided and directed and not resisted, evaded or side-stepped. Any conviction on the part of the mind is very quickly expressed in the physical frame.

Efficiency of thought and action is to be striven for. Effort should be expended in the development of the power of concentration and singleness or unity of purpose. We should encourage habits of relevant decisiveness and an altruistic attitude toward the opinions, decisions and desires of others. Rush and hurry is undesirable and unnecessary if one plans in good season,

wisely and faithfully executes the designs. To be avoided is the cycle of anxiety, inefficiency and worry. Essential is the maintenance of a proper ratio of work, play, exercise, rest, diversion and recreation. Best set aside are the qualms of a too strict conscience; no one is right always and we must take some chance of being wrong.

Cultivate the habit of reaching decisions through the application of judgment, reason, experience, imagination and when decision is reached abide by it or act promptly. Learn to regard things as they are rather than as you wish they were and to accept them at their true value. Imagination, when controlled and coupled with experience, becomes a source of knowledge. Endeavor to rely on positive autosuggestion instead of upon the negative variety. We each have a part to play in life; we should study and attempt to understand it and play it with faith, courage, grace and unswerving integrity, without sham or pretense. Strive to avoid useless sorrow, and when your best and sincere efforts have been put forth, acquiesce intelligently and patiently in the inevitable.

Successful treatment of nervousness exacts thorough understanding, removal or modification of the cause and elucidation of the nature of the disorder and re-education. "As man began to think he came to realize he could best get along when he understood, not only those things about him but himself, his short-comings and superiorities." Always it is the things we do not understand which trouble us and the great significance of thorough understanding cannot be overestimated. When causes are irremediable or unalterable, appropriate treatment is to be directed to conditions with which one is confronted. Mysterious or metaphysical influences, cults, fads, faith cures possess no intrinsic or specific value and are not to be relied upon. Since there is seldom a single or definite cause of nervousness it is not to be thought that a special or infallible treatment is available or applicable in each case. And in administering to the relief of symptoms it is to be borne in mind that they are merely the outward aspects of a disorder and not the disorder itself and this is especially true of complexes and their manifestations. Therefore, while the disappearance of symptoms may indicate improvement it does not necessarily denote recovery and symptomatic treatment is of value but often of only temporary avail.

Generalities and platitudes are of little worth. The keynote of effectual prevention and treatment of nervousness is persistent, calm, searching study; unfailing, specific individualization and abundant, patient, rational explanation. The belief, that it is difficult to secure the confidence of a nervous person, is incorrect. On the contrary, he is decidedly susceptible but is unwilling to display confidence in anyone who has not gained it. He is sensitive to kindly treatment and quite ready to confide in one who can demonstrate a measure of understanding and interest in his fate.

Inevitably, in an art and science which is broadening and developing as rapidly as neuropsychiatry, extremism and radicalism are certain to appear. Radical and extreme tendencies, views and practices should be scrutinized with the utmost caution and definite, reliable proof of the real value and worth of all theories and treatments should be insisted upon before acceptance and usage is permitted.

"Kindliness and patience are the rays that dispel the fog of prejudice and suspicion. They will remove misunderstanding where argument would merely confuse the issue." After all, as Wells remarks, "the only true measure of success is the ratio between what we might have been and what we might have done, on the one hand, and the thing we have made of ourselves, on the other."

SOME OTHER ETIOLOGICAL FACTORS IN ARTHRITIS*

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I believe you will agree with me that the importance of arthritis from a medical, social and economic stand-point has not been, and is not now, duly appreciated. It is not only one of the oldest known diseases, as proven by evidences found on human remains of the stone age, and known as the disease par excellence of the ancient Egyptians, but it is also one disease in which the least advance has been made towards a knowledge of the underlying pathological disturbances.

It is true that the doctrine of focal infection is not new, for over 100 years ago Benjamin Rush devoted a whole page to infection around the teeth, and in 1892

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William Hunter thought that pernicious anemia was probably caused by some infection about the mouth and teeth, but until eighteen years ago when the attention of the Medical profession was called (by Goldthwaite) to the relation of focal infection there had been little or no advance in the determination of the etiological factors of this symptom complex. Since that time the pendulum has swung far over into the extreme relative to teeth and tonsillar foci and many have been forced to wear artificial teeth, perhaps unnecessarily. We are happy to believe, however, that the pendulum has about ceased its extreme swinging and has more nearly reached an equilibrium. The teeth and tonsils have proven to be the greatest offenders, and the foci found there are never to be overlooked. Their importance is being realized by the medical profession almost to the man today, and I do not wish to discourage any effort to locate the foci here, but rather to encourage the thorough exploitation of both as possible foci of infection which may be the underlying cause and source from which metastasis may start. But as the title of my paper indicates there are other etiological factors which must not be overlooked, and which deserve the attention and consideration of all men who practice the art of medicine. It will be impossible to enter into a detailed discussion of each and every etiological factor mentioned, but I hope by mentioning them, to stimulate you to read and study your cases with these in view, as possible foci besides the teeth and tonsils.

My principal idea in discussing this subject today is to call attention to the fact that bacteria are not respecters of persons, nor are they respecters of any organ of the human system, hence it behooves us in treating a case of arthritis to dig deep into the etiology of the case.

There has been a great deal of adverse criticism of exponents of focal infection and sometimes justly so, because we are often too satisfied to stop when we find one foci. Frequently we will have a secondary metastatic involvement of some distant organ or tissue, and the arthritis developing from infection derived from this source. For instance, in a series of cases, it was found that the seminal vesicles were involved in some cases where the primary focus was in the tonsillar tissue. Piecemeal diagnosis is to be warned against, if we would get the best of results.

A review of some of the literature on this subject is very enlightening and it opens up a wide field for study. The accessory sinuses of the head, the appendix, the gall bladder, the cervix, the gastro-intestinal tract, the genito-urinary tract, the exposure to wet and cold, influenza, tuberculosis, pneumonia, typhoid fever, the acute febrile diseases, and skin diseases, in fact almost any tissue which is capable of harboring a chronic infection, in my mind, would be considered a factor to be considered in the etiology of arthritis. From the bacteriological angle we look upon the streptococcus hemoliticus and streptococcus viridans as the predominating causative organisms, though by some it is alleged that yeast fungus growths and also the endameba buccalis may cause arthritis. The colon bacillus may be harbored in the bladder, and by the causation of a low grade inflammation produce arthritis.

Poynton & Paine in 1901 presented quite a detailed evidence in favor of their microorganism as has Rosenow more recently done for his. They found the diplococcus in the blood, pericardial fluid, endocardial lesions, nodules, heart wall and throats, and when rabbits were inoculated, produced arthritis, synovitis, pericarditis, etc.

Rosenow, corroborated by Billings and Barker and Bloomfield, held that in rheumatic fever there is a definite infecting agent and streptococcus which is extremely susceptible to environment and may under changed cultural conditions vary its characteristics as to Morphology, virulence and disease producing ability. Achelma, Singer Lewis and Lungcope have all produced arthritis in rabbits by injecting the streptococcus isolated in a case of endocarditis, arthritis or chorea. However the researches of these men have not been fully confirmed and Reisman has argued against the streptococcus as a primary cause, but suggests that it may serve as a secondary invader as it often does following infection of influenza.

Irons in *Journal A. M. A.* June 30th, 1923, states that the general clinical conception is that all metastatic lesions not preceded by one of the recognized bacterial-infections, enter the body from some pre-existing focus. It is consequently assumed that if the search is thorough and extensive enough a primary lesion may be found and removed.

Irons also mentions three less frequently considered portals of entry of recurring infections.

1st—Mucous membrane of upper respiratory tract.

2nd—Tissue about the hila of lungs.

3rd—Intestinal tract.

The experiments of Thiele and Embleton show that general infection from the buccal mucous membrane occurs in guinea pigs fed with virulent bacteria, provided the food is coarse enough to produce minor lesions of the mouth.

Enlargement of regional lymph nodes is frequently evidence of infection from buccal and pharyngeal mucous membrane.

Moenich in *Journal of Laboratory and Clinical Medicine*, February, 1924, has a good article on the relationship of chronic endocervicitis to focal infection, with special reference to chronic arthritis, and cites a number of cases bearing out the statement that a chronic endocervicitis may harbor an infection which may be a focus for the metastatic involvement of joints and other tissues.

She chose 12 patients with sub-acute or definitely progressing chronic arthritis, in whom other foci of infection had been eliminated, but whose symptoms bore evidence of the continued activity of a focus of infection within the body. A definite increase in specificity for joint tissues was apparent in animals inoculated from strains of streptococcus isolated from this group as compared to that of streptococcus isolated from the cervix in unselected cases. Such tendency to joint localization in the former group was retained over three and four animal passages."

And in conclusion of her paper she sums up as follows:

1st—The anatomic and pathologic facts reviewed, point to the cervix uteri to act as chronic foci.

2nd—Bacteriologic and animal experiments indicate the special roll played by the streptococci.

3rd—Evidence is presented to show the affinity of cervical streptococci for joint tissues.

4th—Marked percentage increase in joint localization in a series of selected cases of arthritis, suggests relationship with Rosenow's elective localization theory in focul infection, etc.

Walters, in the *Surgical Clinics of North America* for April, in discussing infectious arthritis from a surgical stand-point gives three cases of arthritis which were probably caused from infection from the cervix, and in discussion of these cases, he says that an abnormal cervix with its corrugations and folds of mucous membranes containing deep seated racemose glands with tortuous canals, the mouths of which are easily plugged with mucous, affords harbors for the retention of bacteria.

Langstroth, some years ago established the fact that an infection of the cervix mucosa with pathogenic bacteria was common and that if it becomes a focus of infection, it is prone to cause systemic manifestations, as do foci found around teeth and tonsils and other structures.

Billings reports two cases of arthritis secondary to persistent foci of infection about the finger-nails.

Chronic otitis media and chronic mastoiditis, as well as some of the accessory sinuses of the head, must always be looked upon as sites of focal infection in relation to secondary local or systemic infections.

I have recently seen two interesting cases of arthritis caused fy focus of chronic infection being in the prostate and seminal vessels, and we frequently see a typical gonorrheal arthritis.

Clinically we know that the removal of chronic local infections, provided we reach all such infected areas is followed by a freedom from recurrence of metastatic lesions in the joints, and the patient is greatly relieved in most instances, provided of course the mechanical damage from the inflammation of the joint is not too great. It seems to be the concensus of opinion that the streptococcus is the chief offending organism found in arthritis, although probably any other pathogenic organism might be capable of producing the same result. There are some who believe that unless the streptococci is in the focus found that there is some other focus causing the arthritis.

Lott in the *Surgical Clinics of North America* for February, 1924, outlines a diagnostic point between streptococcic infection and other types of infection of the tonsils, and says:

"It has been my experience that if we have a tonsillar focus predominantly streptococcic, we will get god results from tonsillectomy in such conditions as arthritis and neuritis, whereas in cases of a tonsillar focus predominantly showing staphylococcic and pyogenic organisms other than streptococci, we will not get a cure of the arthritis or the neuritis."

It is of course true that countless individuals present foci of the most marked type at various sites, and yet apparently enjoy good health. It is to be remembered that nature's means of meeting and combatting such agents of disease are pretty successful, and that foci of infection become the precipitating factors of arthritis

only when the barrier of defense is weakened or overcome.

I do not mean to say that all cases of arthritis bear a definite relationship to focal infection or vice versa. However, examination and treatment of a case of arthritis at whatever stage, are incomplete unless full consideration be given to the important relation of focal infection. In fact a careful and diligent search for every possible foci of infection forms the premise from which all further activities of determining the etiology of arthritis should start and let me again emphasize that in trying to determine the etiology of a case of arthritis, that your search must include nearly every part of the human body, and while we have not the time or inclination to go into some of the etiological factors mentioned, they are very important and deserve your consideration in dealing with a case of unknown etiology, and we should not stop when we find a bad tooth, or a bad tonsil, thinking that we have discovered the cause sine quo non of the Arthritis.

DISCUSSION

Dr. C. C. Hightower (Hattiesburg): This was a splendid paper, and it means this—that the doctor must get to work. Arthritis, or any other symptom about the body that we do not understand, means that there is some cause somewhere, and the practice of medicine in the future will not be an easy matter; it will be a hard job. When a patient comes in complaining it means that there is something wrong, and we no longer can give a dose of medicine and expect to get results. That is the reason that these off-colored practitioners get a hold, because we do not go to the bottom of the subject. We must examine the patient from head to foot, look at him from every standpoint, and then we can arrive at some definite conclusion as to relief. And that means long, hard work. We have the laboratory to fall back on, we have the nose and throat specialists, we have eye specialists, and we have the fluoroscope and the X-ray and all these various tests to be made, and it requires a lot of time and hard work to make these tests and arrive at proper conclusions.

I want to call attention to one thing the essayist brought out, and that is endocervicitis. Whenever a woman comes to me suffering from some obscure symptom one of the first things I think of is the cervix, and almost invariably when you exclude everything else and have a bad cervix you have the cause of the heart trouble. When the cervix is treated and cleaned up you will find the patient will rapidly improve.

Dr. J. G. Gardner (Columbia): We all know that there is a very definite etiological relationship between systemic disease and focal infections. That has been definitely established. Heretofore we described dyscrasias diseases and constitutional disorders which we now know are the result of focal infection in some part of the body. Focal infections are referred from the skin or from the mucous membrane—any part that is covered with an epithelium. It can be the middle ear or the eye, the nasal sinuses, teeth, tonsils, any part of the intestinal tract, including the gall bladder, the appendix, sigmoid and rectum.

The statistics vary in different parts of the country, which we can readily understand. For instance, in Chicago at the Cook County Hospital they ran a series and found that the teeth were responsible for 75 per cent of the infections, tonsils 45 per cent, and lues 23 per cent. In our part of the country our observations are a little different from that. Our records show that teeth and tonsils are about the same. Our tonsils infections are higher than in the North because of the fact that we pay very much less attention to tonsillar infections here. In the majority of places in Mississippi school children are not examined and throats cleared up and adenoids removed. In the North in cold weather they may have more sinus infections and middle ear infections than we do down here. In the rural districts we do have less luetic infection than in the big cities.

Among the etiological factors involved in arthritis one considers not only the foci of infection, but another great factor is the resistance of the patient. When we see patients with bad teeth and tonsils that are not suffering from focal infection the reason is that they have good resistance—they have good primary resistance, which is the resistance of the tissue where the focus is located. They also have good secondary resistance, so that when the bacteria go through the surface tissue the secondary defense will pick them up—blood and circulatory fluids. Perhaps that is one thing that should be stressed more than it is,—that we must not only locate the infection, but also build up our patient's resistance.

We know that certain bacteria have a predilection for certain tissues. It has been recently shown that bacteria grown in kidney tissue have a predilection for kidney tissue; also that bacteria affecting the joints, grown in human joints, will affect other joints. This is the reason we assign for polyarthritis. If we have an acute, virulent bacterium and our resistance is low, we will have a virulent infection. If we have good resistance with less virulent bacteria the bacteria are either destroyed by the surface tissues and fluids or they lose their identity and we have no infection. With a virulent tonsil we will have a virulent arthritis; if we have a low-grade infection we have a low-grade arthritis.

The real etiological factors in arthritis are the virulence of the bacteria together with the resistence of the patient and the primary and secondary defense of the body, together with the existence of trauma.

Dr. H. M. Folkes (Biloxi). Doctor Hightower brought out an important point, and that is in the question of making the diagnosis, of taking the time and trouble to study the patient. That especially applies in focal infections. I take objection, however, to his thought that the failure to make these studies has been productive of the various cults. I remember fifteen years ago when I first went to Rochester I saw a large sign advertising a chiropractor—right there in the very heart of medicine.

The point I wish to emphasize is that you must not take the finding of one focus as being the definite factor in the causation of the particular attack. You have to keep on studying until you find the whole series. Along that line is the

thought that very few of our physicians ever take the trouble to make an examination of the prostate gland, and right there is one of the most prolific factors in the cause of arthritis. Just a short time ago I had a man come to me who had been through the hands of a half dozen different doctors in the South, and not a single man had made a rectal examination, and there was the sole seat of the trouble. In three weeks' time he was relieved of a condition he had had for several years.

The point I want to make is that where we fall down is in not applying the knowledge we have. I made that same statement many years ago relative to cancer—that the doctors did not take the trouble to examine and study their patients, and here I am making the same statement about another condition. This applies to all lines of medicine—where we fall down is that we do not take the time and trouble to go into our cases. Take that time and trouble, and charge them for it. There never was a place in the world where that is more fully illustrated than in this question of focal infection.

Dr. H. R. Hays (Jackson): The point was brought out by Doctor Gardner of the resistance of the patient. Very often syphilitic patients (25 per cent of syphilitic patients in Cook County Hospital) will go on with no symptoms at all until by reason of some kind of trauna their resistance is lowered and then their latent infection asserts itself. A patient will be treated for various other things, often before his real condition is discovered. Particularly do we see that in our sawmill work throughout the state—a patient will go along without any trouble at all, carrying this luetic infection and going on with his work until he gets some injury that lowers his resistance, and then his infection asserts itself. Very often we would find these patients before their accidents if we took a Wassermann of our patients and were more careful in the diagnosis of venereal disease particularly.

Dr. I. C. Knox (closing): The thing that strikes me relative to focal infections, and particularly arthritis, is the fact that we are too satisfied with a piecemeal diagnosis, and when we find one focus of infection we stop there. One bad tooth removed and a cure of arthritis expected is folly—or the tonsils removed. It may do it sometimes, but very often there is a secondary infection which we overlook and the patient will not get well from the removal of the primary focus alone. That was brought to my mind just recently in a case I saw that had had tonsils removed and still had arthritis. She did not get well in spite of the fact that she had had large tonsils removed. On examining for other trouble we found she was suffering from infection from a large cervix which harbored the bacteria causing the arthritis. In two other cases similar to that we did an amputation of the cervix with complete relief from the arthritis, when removal of teeth and tonsils had not been followed by relief. I have seen two cases of prostatitis which were undoubtedly secondary focal infections because the teeth had been removed.

But our chief aim is not to be satisfied by finding some definite focus of infection, but to go right on, and do not forget that bacteria are no respecters of person, nor organs, nor tissues of the body. They may be concealed anywhere and are one of the primary causes of arthritis and other troubles.

FLUOROSCOPY IN MEDICAL DIAGNOSIS*

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Fluoroscopy, after proper preparations have been made, is a simple and direct procedure, entailing less expense than pictures and less trouble to the operator. From the standpoint of the laymen it looks good. His idea, rather intuitive or from the old impression of the static machine is that the doctor, any doctor, can stand him up before the fluoroscope and tell all about him. From the physician's standpoint, the perfection of fluoroscopy to where it would be dependable would be a boon. Films costing like they do, make picture work expensive.

In the matter of equipment, the first essential is a dark room and a good screen. The eyes must be accustomed to the dark before the viewing is started. If there are other things to do in the light that demand attention, darkened spectacles may be worn to start the preparation of the eyes. Minutes spent in getting the eyes fit mean minutes saved in the examination, and this means less danger of burns. The application of the Bucky lead gird has been an aid to fluoroscopy as it has been to picture work. To get a brilliant view with it greater amperage is necessary so the time of observation must be shorter. Needless to say opaque gloves and any other protective apparel needed should be worn by the operator.

In every examination, as in every diagnostic procedure for that matter, be sure to distinguish the normal from the abnormal The first thing is, have you a lesion. Putting a label on it is less fundamental.

The esophagus necessitates screen examination because with the rapid movement of the bolus, unless a complete impediment is present pictures are hard to get. Extrinsic causes displace the esophagus and intrinsic ones change the calibre, so it is necessary to remember its normal course and normal contractures. It starts out a little to the left, comes back, goes to the left as the left bronchus, comes around in front of the bronchus, comes around in front of the aorta, and turns quickly to the left at the cardia. The principal contractures are at the beginning and cardia, and there are others at the arch of the aorta,

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the left bronchus and the hiatus in the diaphragm.

The principal pathologic changes are spasms anywhere, but oftenest at the cardia; contractures from scarring and malignancy; and pressure from external causes as aneurysm, malignancy and inflammation. Dilatations occur above any contracture. Spasm of neurotic origin is usually higher up in the esophagus than organic. Cardiospasm always shows a wide dilation above it, wider than in the carcinoma. The contour of the lesion is sharply defined as distinguished from malignancy which is more graduai. Malignancy may occur anywhere but it is most frequent from the aortic arch down. New growths, inflammatory masses and aneurysm nearby are the usual causes of pressure from without. Diverticula of the esophagus are rare, but are discernable through fluoroscopy. In viewing an esophageal obstruction it is a good plan to try to make the already ingested opaque meal back up so as to get the lower contour. The irregular course of the lumen in new growth is distinctive. Non-contracting malignancies may be missed in the examination. The most frequent scarring is that after swallowing lye in children.

The stomach is the greatest field for X-ray diagnosis. Here fluoroscopy and picture work go hand in hand. The screen is necessary to note motility and mobility and to survey the organ in different positions. Having found a lesion or the suggestion of one, the patient is placed in the position where films will portray the lesion best. It is coming about that the direct portrayal of pathology is considered necessary for diagnosis. The idea used to be that changes in the behavior of the stomach were evidences of different abnormalities, but now it is the purpose of the examiner to show the lesion itself unmistakably. Cancer occurs most often near the pylorus but may occur anywhere. Ulcer occurs oftenest on or near the lesser curvature about the middle of the stomach, but it too, may occur anywhere.

The essential difference in the two is that the ulcer shows a loss of tissue, in cancer a gain. At the zone of the lesion in each case there may or may not be a muscle spasm. In cancer the lesion and spasm are broader than in ulcer. As would be presupposed the stiffening in the wall in cancer cuts down peristalsis at the point. Peristalsis in both conditions may be increased or decreased. Syphilis and linitis plastica are the next most frequent lesions. Tuberculosis is very rare but must not be forgotten. Benign tumors do occur with such infrequency that assurance of their benignity better not be given on any less firm foundation than exploration. Operating on any benign tumor in the abdomen is like removing an innocent appendix, better a dozen innocent ones be removed, than a bad one be allowed to stay—if good faith exists in the matter.

Duodenal ulcer is the commonest lesion sought for and the most satisfactory to examine for, since Lewis Gregory Cole put forth his direct delineation so clearly. Here fluoroscopy is best used to place the patient where his lesion will outline best. The standing position is preferred by many, the horizontal by others. The lesion may be clearly visualized, it may not. With the fluoroscope one can detect presence or absence of changed peristalsis, and can place the patient in such position that his lesion will outline best in the films to be made. Ulcer usually shows as a loss of substance on the lesser curvature side of the duodenal cap with puckered mucosa next to it. Across the cap muscular contracture makes a band. Spasm from extrinsic causes or adhesions are the chief causes of error.

According to its nearness to the pylorus so will the tendency to blockade completely vary. Here is another source of error. Pylorospasm may or may not be caused by ulcer. One of the tightest I ever saw showed nothing more than a low grade cholecystitis to account for it. In duodenal spasm as in gastric the relaxing effect of belladonna is well worth trying.

To examine the colon the opaque enema under the screen is indispensible. Normally there is a little halt at the lower end of the descending colon and at the splenic flexure. Motion is rapid elsewhere. The principal lesion sought for is malignancy shown by a filling defect or obstruction. Tuberculosis may imitate it especially in the cecum. Ulcerative colitis shows spasm and occasionally direct evidence of the ulcer defect. Spasticity may occur in any colitis or from causes unexpected. Diverticula may be revealed or not. The inflamatory mass around a diverticulitis is best shown indirectly. Lesions in the rectum are best found by the proctoscope.

In the lungs the fluoroscope can be used to locate accurately tumor, abscess or effusion. Tuberculosis or other parenchymatous lesions are best located with films, as

the lesion is too indistinct sometimes for the screen.

The heart and aorta are best studied with fluoroscopy. The widening of the aortic shadow in aortitis and aneurysm is usually delineable, but often presents difficulties. Lymphsarcoma, Hodgkins, tubercular gland and carcinoma confuse, especially when the pulsation of a normal aorta can be transmitted to such a mass. An aneurysm in which firm clot has formed may not pulsate, and be mistaken for tumor. Sub-sternal goiter is best proven or disproven by the fluoroscope. The large vessels coming into a long thorax from above may confuse.

The water bag appearance of a pericardial effusion is known to all of us. The enlargement of the apex to the left in aortic insufficiency, and the total increase in the silhouette especially to the right in mitral disease, are the principal changes in heart shadow.

Gentleman, this is a technical article for men interested in general medicine. The high points only are touched, so that it may not be too tiresome. There may be much more to be said, but you did not come down here to be worn out with too much detail.

DISCUSSION

Dr. W. F. Henderson (Jackson): I am glad to hear the Doctor say in the last sentence that this paper is intended for the general practitioner. I daresay the majority of you here do not know much about the X-ray, which is not at all to your discredit. The important thing is to be able to arrive at a diagnosis of the pathology which exists, and you do not care whether it is done by a fluoroscope or radiography or what, so long as you arrive at the desired end.

There are three or four things which I want to discuss. Those of you who are in this work remember how enthusiastic we were in the early days of radiodiagnosis. I can remember quite well in my first year or two of X-ray work that I was not merely interested, I was over-enthusiastic; I was willing to overstate what we could do. I was anxious to help the clinician all I could, and I therefore made the mistake of taking a chance and stating sometimes something that I thought would hold his favor. When a patient comes to us we must remember that while the clinician's favor is to our advantage, and while we wish to do everything possible to retain it, we must not under any circumstances allow our desire to aid him outweigh our sense of proportion with regard to the best interests of the patient. What I want you to understand is that we must limit ourselves to what we are actually able to do.

Another point along this same line is that when you give a patient a barium meal often the doctor who sent him expects you to tell at once whether it is ulcer, cancer, tuberculosis, or what not. Very obviously he is asking you to do what he cannot do himself with the abdomen open. He cannot palpate the patient and tell, and yet he expects you to look through the patient and differentiate between cancer and ulcer. We cannot always do that. Often the surgeon with the abdomen open is hard pressed to say whether it is ulcer or cancer. Of course, we are often able to state it is ulcer, or it is cancer, but do not press your radiologist too hard. Sometimes you will have to content yourself with the statement that a lesion exists in a certain location.

Ninety-five per cent of all gastric tumors are malignant, therefore when you say ulcer of the stomach you may be wrong five times out of one hundred. If your radiologist tells you it is malignant, and later he is proven to be wrong, do not hold it against him. It is far better to remove one ulcer thinking it to be cancer than to allow it to remain until it actually becomes such.

I should like to stress this fact, that no matter how capable your radiologist may be, no matter how wide his experience, no matter how cautious his judgment, no matter how keen his vision, the radiologist must not sit at the head of the table; always the clinician must be the helmsman and must guide and direct the case. The radiologist is the consultant and must keep that position. In this way only will the greatest good accrue to the patient.

Dr. C. C. Hightower (Hattiesburg): We use the fluoroscope a great deal, and if we use it regularly for routine examination we will discover many things we never knew before. Every doctor can have a fluoroscope in his office, and if he will train himself to use it he will derive great benefit from it. It is surprising to me that more doctors do not have fluoroscopes, because they can be obtained at a moderate price. We have discovered many things that we could not have found without a fluoroscope. For instance, we examined a man about 45, with vague symptoms—we did not know what was the matter with him. Put him under the fluoroscope and found he had an aneurysm of the aorta. He asked me to tell him what would be the outcome and I told him the facts—that he would not live very long. As far as we knew there was nothing to be done for him. Two months after that he dropped dead—I am sure from a ruptured aneurysm.

In regard to tuberculosis, we cannot always go to the expense of having pictures taken, and that is the advantage of the fluoroscope in the office. If you have an absolutely dark room you will soon learn by actual practice to recognize things you could not see at all at first. In tuberculosis we have been able to point out lesions by the fluoroscope alone, and in advanced cases we have been able to look at the patient and see as plainly as my hand the outline of the lesion in the lung and so be able to tell the patient the extent of the involvement and what he might expect. In gastrointestinal examination a man at first cannot see anything, but if you keep on looking you get to where you can see something after while.

Here is the great advantage of fluoroscopy. If you are not an expert you gradually become better and you can use this picture with other clinical knowledge. The doctor who knows the whole thing, I believe, is better able to arrive at a correct diagnosis than the one who just occasionally makes this examination of patients.

Make a routine examination of every patient by the fluoroscope and you will soon learn to read these pictures. I am not saying anything against the expert radiologist, but it is a great benefit to have a fluoroscope in your office.

AIR COOLED ULTRA VIOLET LIGHT THERAPY*

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CHICAGO, ILL.

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When the skin of the human body is exposed to the chemically active ultra violet energy, a number of objective and subjective reactions can be definitely determined.

First, after a latent period that may occupy from two to six hours, a reddening appears which is properly called an "actinic erythema." Actinic erythema may develop in varying degrees of intensity, depending upon the following factors:

1. Intensity of the ultra violet energy given off by the tube (as measured by the voltage at which the tube operates). The greater the voltage, the more vigorous the reaction.
2. Distance separating the tube from the skin. The reaction varies inversely as the square of the distance between the tube and the skin.
3. Susceptibility of the patient's skin acaccording to (a) age (young people more susceptible); (b) sex; (female react sooner than male); (c) endocrine type (blondes burn more quickly than brunettes); (d) part of body exposed.
4. Time of exposure.

Generally, a pronounced actinic erythema should not be sought. As in X-ray therapy, so in ultra violet light therapy, the erythema that appears is a hindrance rather than an aid to the treatment. Therefore, a knowledge of the factors that go to produce an actinic erythema should be carefully memorized in order that treatments may be administered without precipitating a severely interfering reaction such as the erythema represents. A slight reddening is stimulative. A more intense reddening is regenerative. Excessive reddening is invariably accompained by vesication, and is superficially destructive. Thus, there are three degrees of erythemas which may be designated:

1.—Stimulative erythema.
2.—Regenerative erythema.
3.—Destructive erythema.

Excepting in purely focal skin work, a destructive erythema is never employed.

General or Systemic Irradiation

Victor Air cooled lamp. Operating voltage, 70. Tube skin distance, 1 meter. Average exposure time, *in seconds.*

	Stimulative		Regenerative	
	Light (Blonde)	Dark (Brunettes)	Light (Blonde)	Dark (Brunette).
Infant	15	20	30	40
Children	20	30	40	60
Female adults ...	50	60	90	120
Male adults	60	90	120	150

(From "Outline of Ultra Violet Therapy," Pacini).

The erythema persists for from eight to twenty hours and then usually assumes a bronze tint. If the erythema was regenerative or destructive in intensity, the bronze pigmentation is accompanied by a slight or marked exfoliation. The bronze pigmentation lasts a long time, from a few months to a few years, according to its intensity. Upon subsequent exposures to ultra violet radiation, a freshly pigmented skin surface is found to be about ½ to ¼ as sensitive as a fresh, untreated skin surface. Therefore, each ultra violet exposure after the first, given on the same surface, must be proportionately increased in time to compensate for the tolerance established by the pigmentation. However, if ulcerated surfaces are being treated to stimulate epithelial covering, each subsequent ultra violet exposure must not be increased in time, since the protective pigmentation is necessarily absent and the newly formed granulations are too young to accept an increased amount of radiation.

An analysis of the blood in disease before and after exposure to ultra violet energy shows an increase in

1. calcium.
2. phosphorus.
3. iron.

Normal individuals show little or no change. The increase in calcium has been carefully and conclusively demonstrated by competent workers at Columbia University, Johns Hopkins University, Yale University

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and elsewhere; and upon this proved finding, many therapeutic uses for ultra violet radiation have become clinically important and popular.

A review of the calcium metabolism and its variations is an obviously excellent key to the scientific use of ultra violet.

Hamburger (1) observed that calcium salts stimulate the phagocytic effects of leucocytes. This may explain the increased opsonic index that follows exposure of the body to ultra violet energy. The opsonic index is increased generally for all pathogenic bacteria, and specifically for any one organism that may be infecting at the time. In every instance of lessened cellular resistance leading to easy infection of the body under any slight provocation, ultra violet energy is specifically indicated. In proportion at the resistance is raised, the calcium most usually becomes normal in amount.

Kastle, Healy and Buckner (2) have shown that calcium reduces anaphylactic reactions. Novak (3) studied hay fever, bronchial asthma and hyperesthetic rhinitis. He found that when any of these conditions are accompanied with calcium deficiency, and they very often are, general irradiations under ultra violet light with calcium lactate and thyroid by mouth, led to complete reduction of the anaphylaxis with disappearance of all symptoms. Angioneurotic edema, chronic urticaria, some cases of eczema and psoriasis and seborrheic dermatitis and likewise anaphylactic reactions; and are dispelled promptly by ultra violet treatment apparently through the correction of the calcium metabolism.

Pettibone (4) finds a marked decrease in blood calcium in protracted jaundice. Bradycardia and some of the mental and nervous symptoms are ascribed to the deficient calcium in icterus. Under ultra violet, the reduction of pigment toxicity and the clearing of the mental and nervous symptoms can probably be accounted for on the basis of the calcium increase induced.

It is definitely established that bone, joint and glandular tuberculosis are immensely benefited by ultra violet radiation. While less brilliant in its effects upon other forms of tuberculosis, ultra violet is nevertheless of much value in all the clinical varieties of tubercle infection.

Mayer (5) mentions excellent results in tubercular peritonitis, in which a rapid disappearance of peritoneal fluid is noted. Tubo-ovarian tuberculosis responds well.

Obviously, the treatment of fractures showing a delayed union should and does furnish good results. Similarly, osteomalacia and demineralization of bone incident to disease or disuse, are benefited by the radiation.

The conditions showing faulty calcium metabolism, either insufficient element or inadequate fixation of the element, that have been successfully treated with ultra violet energy, include (6):

1. Anaphylactic reactions:
   (a) Hay fever.
   (b) Asthma.
   (c) Eczema (occasionally) and other diseases of the skin.
   (d) Angioneurotic edema.
   (e) Certain gastro-intestinal disturbances.
2. Infantile tetany.
3. Rickets.
4. Diseases of bone:
   (a) osteoporosis;
   (b) achondroplasia;
   (c) osteogenesis imperfecta;
   (d) osteomalacia.
5. Fractures.
6. Tuberculosis:
   (a) larynx,
   (b) bone,
   (c) gland,
   (d) joint,
   (e) peritoneal,
   (f) intestinal,
   (g) genito-urinary,
   (h) skin,
   (i) pulmonary.

Because of the influence on iron metabolism, the anemias of children, chlorosis and secondary enemia of adults respond promptly to the energy.

For reasons that are not yet clear, ultra violet radiation has been found to do good in these conditions:

1. *Internal medicine*—Dysentery, influenza, diseases of the liver, diseases of the glands of internal secretion, chronic peritonitis, mucous colitis.

2. *Surgery*—The treatment of infected wounds.

3. *Gynecology*—Amenorrhea, Menorrhagia, Dysmenorrhea, Ovarian disease.

4. *Skin*—Furunculosis, Herpes zoster, urticaria, lupus vulgaris, scrofuloderma, acne vulgaris, pruritus.

It is obvious that the greatest possibility for the clinical usefulness of this important radiation rests in the treatment of metabolic disorders. It must be remembered that the energy is very like the X-Ray in many of its physical qualities. In fact, it may be

regarded as an extremely soft X-Ray endowed with a tremendous capacity to do chemical work. It is pleasing and reasonably safe to use. The clinical results it furnishes are commendable to the point that ultra violet has undoubtedly won a therapeutic prestige in every way equal to the diagnostic prestige of its fellow energy, the X-Ray.

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MORE RECENT PROGRESS IN OPHTHALMOLOGY*

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Ophthalmic progress is taking two directions; the first leading to a better understanding of purely medical problems; the second leading to a better understanding of practical economic problems and of the patient as a human being and it is especially in this part of my subject that I wish to interest you.

I believe that the principal practical problem of organized medicine today is greater and more economical service to the public; not for the purpose of directly increasing the doctor's income but for the purpose of conserving health at a minimum expense of time and money by reducing, through a more thorough understanding of the physicians economic problems, the loss and waste with which medical practice is so generously burdened.

Medical Meetings

Medical meetings are essentially intensive postgraduate courses; which we attend primarily for useful information that can be advantageously used on those who entrust their health in our care; and the time is not far distant when medical meetings will function as such and will devote a larger part of their attention to the discussion of recent progress in the various medical branches and the details of rendering greater practical service to the public; rather than to the reports of cases and subjects which interest the essayist, but which often do not have much practical value to the majority of listeners and readers.

Postgraduate Teaching

Postgraduate instruction is undergoing much the same evolution through which the undergraduate passed some twenty years ago. Definite schedules; the separate instructions of different grades of advancement; systematic didactic, laboratory, and clinical instruction given by trained members of an organized teaching institution and limited to the number of students that can be given the best instructions, and to those who are qualified, and really want to work; are fast replacing the type of postgraduate course in which any body did any thing at any time that fancy dictated, and in which the teacher's aim was a display of wisdom rather than of instruction on how to better serve the public.

The Patient

Patients usually seek professional medical assistance because they believe something ails them, which very naturally they expect the physician to thoroughly understand, and if practical, to remedy.

This simple fundamental fact which has been so successfully taken advantage of by the newer cults, has in the past apparently been lost sight of at times by the regular medical profession. Our increased knowledge of the construction and function of the human body and its ailments, enables us to render the greatest possible service to the well and the sick. Fortunately, we are seeing the handwriting on the wall, and we are devoting much greater attention to the patient as a human being, rather than a case of this or that disease; we are more thoroughly studying the inter-relation of the several bodily functions; we are taking more interest in teaching the public the art of healthful living, physical and mental; and we are intelligently trying to give the public the best possible value for that portion of their income which is paid to us.

The time is not distant when (for future reference), our patients will routinely request a detailed report of our services.

As physicians, let us not forget that we can at best make nature's repair plant function as effectively as possible, and that in Ophthalmic practice at least, a goodly number of our patients would not seek our professional assistance if their bodily health, other than their eyes, was reasonably perfect. In the majority of slight refractive errors for example, the subjective symp-

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toms represent evidences of general fatigue, in which the focusing and fixing apparatus play a major or minor role, and it is just as important that the Ophthalmologist directly interest himself in minimizing excessive fatigue which often involves physical and mental hygienic errors of omission and commission, as in the prescription of medicine and glasses, which may be neither necessary nor useful when the circumstances, local or general, that have produced the increased fatigue, no longer exist.

If we of the medical profession, wish to retain public confidence, we must deserve that confidence by professional and financial square dealing. The Placebo and other forms of medical camouflage represent deception, which is more reprehensible in us than in those we condemn.

Medical Economics

The cash store and the Federal income tax are the greatest recent aides to the medical profession. The former has taught the public that in paying cash they should receive more value by not having to pay for those who do not pay. The latter has made physicians keep a record of their income and expense, which if studied, will enable them to render better service by minimize the loss, waste and extravagance for which the consumer always pays.

Do you know that the average physician realizes less than forty cents of every dollar that he earns? Services rendered, to the poor, through professional courtesy, and because of the expectation of publicity, represent at least fifteen per cent of his efforts which are not charged. Another fifteen per cent is charged but not collected. The average overhead cost including all attendant expense, of medical practice is more than thirty per cent, so that the earned dollar shrinks to a net forty cents. Going one step farther do you know that on the basis of six hours per day devoted to actually treating patients, with a three hundred day working year, of which twenty-five days are allowed for vacation or other absence that an average charge of one dollar per hour will produce a net income of less than one thousand dollars a year. In other words if you desire a net income of ten thousand dollars per year in medical practice, you must make your average time worth ten dollars per hour to the patient, who is the consumer, and from whom your fee must be earned.

Don't you think that every medical organization should have a committee on medical economics to help the physician in innumerable practical ways such as the maintenance of permanent clinical and financial records in the best, easiest and quickest way, etc. Data may be gathered on the various divisions of medical income and expense, thus you and I could more easily know how to increase our gross and net earnings to the highest practical point by improving the quantity and quality of our services and by minimizing expense, loss, and waste; how to easily determine whether in any given instance the grouping of a number of physicians in a hospital, office or diagnostic unit would be a practical success and how income and expense could be equitably distributed; and how to determine in a given instance whether increased expense, or assistance, would be of practical value and how to determine its use, value and earnings.

These are but a few of the many ways in which our medical organizations could and would help us if we were sufficiently interested and cared to break with some of the the traditions and mistakes of yesterday.

Whether you will or not, the days of Elijah, who was fed by the ravens, are over; as are also those of Robin Hood, who robbed the rich and occasionally gave to the poor.

Optometry

Refraction is fast slipping from the domain of medicine and only a much more aggressive policy on the part of the medical profession and Ophthalmologists in particular can retain it.

If refraction is lost to medicine, Ophthalmology, which is now one of the most poorly paid medical specialties, will cease to attract physicians, which means that the public will be practically deprived of the services of those who thoroughly understand both the eye and the rest of the human body and their ailments.

If we wish to retain refraction, we must interest ourselves in the public and give better and more economical optical service; we must supervise the dispensing of glasses in order to unify our responsibility to the patient; and we must enlist the help of the medical profession in withholding support of the optometrist and in an organized campaign to place the pertinent facts before the public.

Whether we supervise the dispensing of glasses by employing an optician, or mak-

ing the necessary measurements and have the lenses ground and frames assembled by an optician; or by sharing our responsibility for the public eye-sight only with those who meet our requirements of competency in the testing of eyes for glasses are minor matters. The important thing is that we make ourselves competent to shoulder the entire responsiblitiy for the public's eye sight and that the public be given the best and most economical optical service. Commissions from the sale of glasses and other subterfuges are forms of petty graft for which the patient must pay most dearly, and have no place in our scheme of ophthalmic practice.

Practical refraction requires in the vast majority of cases an intimate knowledge, not only of the visual apparatus but of the entire human body; in other words to efficiently prescribe glasses usually necessitates an examination based on a thorough understanding of ailments of the eyes and ailments of the human being of which the eyes are a part. The knowledge we believe is, generally speaking, to be found only in those who have passed the accepted tests of medical fitness.

If Optometry can serve the public as well as, or better than, the medical profession through Ophthalmology; let us say so. If not, let us prove it, and through our representatives, give the public every possible opportunity of knowing who we are and for what we stand; because organized Optometry is presenting its virtues in the most favorable and most aggressive manner possible.

Ophthalmic Classification

Our classifications in ophthalmology are imperfect. We name similar conditions differently and very different conditions similarly. I believe that a system of classification and nomenclature based upon cause, as manifested by the characteristics of the tissue reactions, would simplify nomenclature and materially aid in the better understanding of processes, physiologic and pathologic. I know that there are many medical problems unsolved but the sooner we attack every case from the fundamental standpoint of cause and effect, as manifested in the reactions which take place, the sooner this number will be reduced.

Affections of the body are developmental and acquired, and of physical and chemical origin. Physical causes include mechanical force, heat, light, and electricity. Chemical causes originate, outside or inside of the body; which are produced in the process of metabolism of one or more of the several organs, or by the products of organisms; bacteria, fungi, protozoa, metazoa, etc.

True it is that more than one cause can act at the same time and that we have not learned in many instances, the direct relation of cause and effect upon the various bodily tissues; but, I believe that the ocular tissues react somewhat differently to each of these causes and by a closer routine observation of the fundamental reactions of the tissues that we will ultimately identify cause by the characteristics of effect.

Ophthalmic Diagnosis

The greatest recent advance in Ophthalmic diagnosis is the adaptation of focal illumination, in the form of the slit light, to the Capski corneal microscope.

Although at present, clumsy, cumbersome and expensive; its use is helping to clarify our understanding of anterior ocular affections and in some instances to better determine progress, cause, and treatment.

With the present equipment at our disposal, the anterior ocular tissues can be practically studied with linear magnifications ranging from fifteen to one hundred; and with at least four forms of illumination, each having advantages and accentuating certain details.

These forms of illumination are essentially:

1. Focal refracted, in which a divergent or convergent beam, or an actual slit, is played upon the tissues, affording a rather accurate estimation of depth localization by means of the relation of a given point to the anterior and posterior surfaces which are seen as brilliantly illuminated rectangles.
2. Diffuse refracted, which roughly corresponds to ordinary daylight.
3. Focal reflected, in which the light is so angled that its reflection from the various ocular surfaces can be studied as ordinarily are the reflecting surfaces of lenses or mirrors.
4. Diffuse reflected, in which the light is reflected into the adjoining tissues, corresponding somewhat to transillumination.

In the cornea very small foreign bodies and rust spots can be identified; as can uveal involvement, through posterior surface opacities; and other finer tissue de-

tails in the epithelium, Bowman's membranes, Stroma, Descemet's membrane and endothelium; in developmental and acquired conditions, often affording clues to process and cause. Of more academic interest are the nervous and vascular systems.

In the anterior chamber, slight differences of depth (lens sub-luxation); diminished size of the filtration angle, (Glaucoma); and very slight opacities, which appear as dust in a dark room crossed by a beam of light, (Uveal involvement); have a practical value. Rather interesting, is the movement of opacities upward in the posterior portion and downward, nearest the cornea.

The finer changes of size, shape and color seen in developmental and acquired affections of the iris include diffuse and focal, retinal and uveal, pigment proliferation, dispersion and absorption; stromal infiltration, cicatrization, and atrophy; and vescularization, both in and on the iris. The careful study of lens-iris adhesions often affords information of immediate practical service in treatment.

Six reflecting surfaces and at least that number of zones can be observed both in the anterior and posterior lens.

These zones are:

(a) Central or embryonic, which forms before birth.

(b) Intermediate or infantile nuclear, which forms during the first few years of life.

(c) Peripherial or adult nuclear which forms during the remainder of life.

(d) Transitional or cortical, which is undergoing transformation into nucleas during life.

(e) Sub-capsular which contains the newest formed lens fibers.

(f) Capsular, covered by flat pavement cells.

The details of opacification as they involve these zones facilitate our understanding of the time of life when the opacity began and to a certain degree of its progress and the best method of treatment. We can thus determine in the majority of cases whether or not an opacity is developmental or acquired, of physical or chemical origin, and due to the products of metabolism with or without the effects of pathogenic organisms.

Among the developmental affections of the lens which can be identified are; remains of the tunica vasculosa lentis; anterior and posterior; the hyaloid artery and attachments; the anterior more or less upright Y shaped suture; the posterior inverted Y shaped suture, punctate and linear deep cortical opacities, etc.

Post-traumatic opacities include; those with capsule rupture, concussion opacities which frequently begin in the posterior subcapsular zone, and the anterior ring shaped opacity of Vossius, which corresponds with the pupil and comparatively rapidly disappears.

Senile cataracts are apparently due to multiple factors; developmental and acquired (metabolic and possibly physical, such as heat, light etc.). Depending upon the varying inter-relations of these factors, there are the different types of nuclear and cortical opacities.

Associated with intra-ocular disease especially of the uveal and retinal tracts, lens opacities are frequent. These are the "Complicated Cataracts" and are especially important because they frequently occur in eyes potentially sightless, in which the removal of the lens will not improve vision.

These opacities begin in the sub-capsular zone, most frequently posterior, early in their development are rosette shape and located near the axis. They are characterized by their high degree of reflectibility, their porous character and by their rapid advance usually forward.

I do not believe that one has the right to operate upon a cataract unless its type, development, traumatic, senile, complication as well as its shape or zone involvement are definately understood.

In the anterior vitreous, congenital and acquired opacities can be differentiated, as can be those due to deposits, and those due to changes in the fundamental vitreous structure.

The red free light by which the color scheme of the fundus is changed from a pink, yellow, red to a green, yellow and black; enables us to determine more easily slight retinal caliber changes, hemorrhages, and certain changes in nerve structure, especially in the papillar macular region.

New Instrument

I have perfected, and hope to soon have marketed at about one tenth the cost of corresponding instruments now on the market, a small portable combination ophthalmoscope, retinoscope, focal illuminator, slit light, operating lamp, and corneal microscope.

As a direct ophthalmoscope, the instru-

ment can be used with four light intensities, with or without reflexes, and with or without red absorbing light. In the examination of media, convergent or divergent light may be used just as any lens combination which can be changed from plus twenty-five Dioptre to minus twenty-five Dioptre, in units of one, five, ten, or twenty Dioptres, without passing through any intervening lenses.

As a retinoscope, the instrument may be used with slight divergent illumination which corresponds to the plain mirror, with more divergent illumination, corresponding with the concave mirror and with a double crossed light corresponding with the plain mirror each method having certain advantages.

As a focal illuminator, the instrument affords a wide range of illumination; convergent and divergent, including a small linear beam brightly focused, which we call the slit light; also a crossed, round flat light of varying size, adapted for operative work.

The widely divergent illumination can be used as a ruler of light to facilitate the determination of small differences of symmetry, while the more convergent illumination is better adapted for the measurement of smaller objects such as the palpebral opening, cornea, etc, and the still more convergent illumination is better adapted for the measurement of pupillary reactions etc., by illuminating the entire retina or a small part.

The corneal microscope affords magnifications ranging from ten to fifty, and will, I believe give the observer the same practical advantages obtained in the larger instruments now on the market.

Surgical Treatment

The operation of Phakeoresis, or removal of the lens by suction obtained from a small electrically driven pump has been successful in the hands of certain European operators, especially in uncomplicated immature cortical senile cataracts; but whether or not it is adapted for our use remains to be seen.

The intra-capsular extraction of cataract especially with the Smith technique is apparently much less hazardous in India than in this country, probably due to both the lens and the individual being there exposed to a very hot climate and a very bright light.

The innumerable modifications of the operative treatment of senile cataract which have been suggested, and which have been tried and discarded in the court of general usage, only serves to emphasize that to the present time the accepted combined extraction is for the vast majority, the best and simplest method of treatment in uncomplicated senile cataracts. There are styles in ophthalmic surgery as in dress, and in our effort to progress and do things differently, the pendulum of novelty swings from extreme to extreme occasionally obscures those procedures which have remained stationary through long usage.

Generally speaking, the Elliot operation seems to be the operation of choice in noncongestive glaucoma; and the sclero-iridectomy in the congestive form.

The anesthetic injections of the orbital opex in intra-ocular operations, as well as the injection of the peripheral facial nerve or the operation of canthotomy to prevent forcible contraction of the orbicularis, are most valuable adjuncts to intra-ocular surgery. We routinely inject about one-half cc. of a two per cent novocaine solution, with two drops of adrenalin, practically at the apex of the orbit with a two inch needle, entered at the lower temporal equator of the eye ball. This location is selected because of the absence of extra-ocular muscles and because the nasal branch of the fifth enters the orbit through the lower portion of the spheniodal fissure. Usually within a moment, the pupil dilates, showing that, probably through the sympathetic dilator function indirectly that the intra-ocular portion of the fifth nerve has been anaesthetized.

Butyne as a local anesthetic in the conjunctival sac, apparently insensatizes the tissues, with the same intensity as cocain, does not destroy the epithelium as rapidly as the older drug.

Medical Treatment

The use of nonspecific protein therapy is still experimental which means that we do not know its exact action, uses or dosage, although in gonorhoeal ophthalmia it has become a part of our routine treatment. Even here I have seen, in apparently similar cases, marked improvement follow its use in one instance and no improvement in another.

In the treatment of dacryocystitis and trachoma the tendency appears toward nonsurgical methods. With the possible exception of mercury and certain coal tar derivatives in staphylococcus and strepto-

coccus infections, optochin in pneumococcus, zinc in diplobacillus, and silver in gonococcus infections we have no conjunctival antiseptics of specific value. Borax, boric acid, potassium permanganate and the legion of other solutions which have been, and probably will be used in eyes as long as time lasts; are in the proper dilution non-irritating, and isotonic with the tears; but do not have and curative action except in the removal of secretion which may be chemically irritating. Aqueous solutions in the inflamed conjunctiva are diluted to at least one-twentieth of their original strength within five minutes, which means that even assuming a bacteriacidal action in normal strength, which is far from proven in most instances; homeopathic dilutions soon result which could not possibly have specific curative value.

Radium and X-Ray therapy are still experimental and generally reserved for inoperable cases.

Tuberculin therapy has been more widely adopted in ophthalmology than in other medical branches, possibly because the local reaction can be better studied and regulated in the eye than elsewhere. The objection to its use is in the general reaction that may unfavorably affect the patient's bodily health, and even life.

Light therapy affords a local without a general reaction and seems to offer certain advantages as an adjunct in the treatment of ocular tuberculosis.

Endocrinology has thus far been of greater value in the understanding of developmental and metabolic problems than as a direct means of specific medication. With the exception of the thyroid, the pancreas, adrenals, and the pituitary, the active principles of the ductless glands have not been isolated, which practically means that for the most part, specific endocrine therapy is of more value in the experimental laboratory than in the physician's everyday practice.

Unfortunately there is no medical treatment of cataract worth even a trial, which is mentioned, that the general physicians may prevent those who have been falsely advised from wasting their time and money and above all, of having their hopes of sight restoration, ultimately blasted by the truth.

Conclusion

My presentation of this subject has purposely been largely a discussion of the advances of today and tomorrow in ophthalmic practice, not because I undervalue purely scientific progress, but because I believe that more good will result from a frank and free discussion of everyday problems, rather than from the presentation of technical and obscure details in which most of you are not directly interested, and which you will have forgotten long before they can possibly be of use.

Honest and faithful service in medical practice is, and will always be rewarded by the comforts of life and sufficient of this worlds goods to provide for us and ours when the shadows fall toward the east, if we will but devote a very small part of out efforts to the honest, practical simple and direct solution of the less scientific problems which ultimately mean professional and financial success or failure.

Whether or not you agree in my suggestions is a minor matter. Of importance is, that with the forward movement of the hand of time that we see the necessity of practical reforms in medical practice, both from the standpoint of the physician and the patient, and of greater importance is the necessity of your taking a real interest in their realization.

DISCUSSION

Dr. T. J. Dimitry (New Orleans): As an ophthalmologist I feel it behooves me to say something on Doctor Bahn's paper. I might state that it is a very valuable and attractive paper and one to which I listened with great advantage, and had I not heard his final words I would not have been able to say a word other than confirming his observations. His final remark is that cataract in its incipiency is incurable and is not to be benefited by treatment. I would like to ask, if cataracts come about simply, as the result of age? are they not produced by something other than age? If you will admit the latter, i. e., pathology, then I would say that incipient cataract can be benefited, may not be cured, may not have perfect vision restored, but at least the lens changes prevented from going further in its progress, and the patient may never become permanently blind.

Dr. Charles Bahn (closing): In reply to Doctor Dimitry's question, I appreciate his bringing out that question because it is in the minds of most ophthalmologists. Remember that cataracts are due to either developmental or acquired causes—to either physical causes, to the products of metabolism, or to the poison of the lens from poisons developed elsewhere in the body. Ordinary senile cataract, which I had in mind, is usually a combination of developmental causes and metabolic causes, and probably physical causes. I do not believe that any medicine we can give will affect our developmental defects. I do not think it will keep us from growing old, but if we are being poisoned daily that it will check the poison. To that extent it will have a beneficial effect upon the lens, but further than that I rather doubt.

THE TREATMENT OF VENEREAL DISEASES FROM THE STANDPOINT OF PREVENTION*

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Since 1917, we have been awakened to the most dreadful of all scourges that has ever confronted humanity. The cloud of secrecy and the cloak of false modesty and prudery, beneath which venereal disease has been steadily ravaging the health of the nation, are fast disappearing in the light of the truth. Openly we have fought national menaces, such as bubonic plague, yellow fever and tuberculosis; now let us meet this national emergency with typical American spirit and by arming ourselves with facts and educational facilities.

The protection of the public health is an inherent responsibility of any government. Realizing this responsibility, the United States Government through the agency of the United States Public Health Service and its far reaching influences, is waging a relentless battle. Just as criminals are not allowed to rove at large and endanger the lives and property of citizens, so should those suffering from dangerous communicable diseases be prevented by the health department from coming in contact with those who are free from disease. Not alone from the standpoint of preserving or improving the national fiber, but for economic reasons as well, should such agencies receive the unstinted support of the medical profession and laity. Each state and individual taxpayer is paying heavily for the misdeeds of society. Not alone is the care of such cases important economically, but the loss to labor is an economic loss and everyone loses when there is an economic loss. Ignorance is largely the cause of the prevalence of venereal diseases. Fifty-five per cent of young America is infected with a venereal disease before the age of twenty-three. Two hundred and fifty thousand die each year from the effects of venereal diseases, as against one hundred sixty thousand from tuberculosis. Approximately one-fifth of all inmates of insane institutions are there because of syphilis; thirty per cent of all the blind in our institutions have been blinded by gonorrhea; eighty per cent of all the operations upon the female generative organs are due to venereal diseases. With these significant facts before us, the problem ceases to be a private affair.

—Causes of the Prevalence and Increase in Venereal Diseases

United States Public Health Service reports indicate that venereal diseases are not decreasing, but increasing in number. Removal of segregated vice or assignation houses has had no effect upon the sex desires of man or woman. The old-time prostitute has disappeared, but a new type has taken her place. The form has changed but the substance remains the same. In her stead have appeared an army of clandestines and amateurs, the most vicious because of ignorance, who bid fair to wreck the very foundation of society. The sex problem seems to laugh at man-made laws, for, though legislation has closed the old red-light districts, call houses and madame apartments have made their appearance in the very heart of our fashionable residential districts. This new type has evolved during the last decade, in response to the inexorable law of demand and supply. She is young, pretty, attractive. She bears no resemblance whatever to the miserable, brokendown, worn out, prematurely aged hag who eked out a miserable existence soliciting on the streets. As you meet her on the street, you would never realize that you are standing face to face with society's greatest tragedy. Her conduct is as exemplary as that of any young miss out shopping or walking; she dresses stylishly, and is neither more nor less lavish in the use of the henna, lip stick, rouge or black crayon than her reputable sister—you cannot tell them apart. She belongs to no class, race or creed; any girl of a good family may join her ranks without suspicion. To the average man who formerly sought the favor of the professional prostitute for the satisfaction of what to him was an uncontrollable, physiological demand, every girl today is fair game and the pursuit is constant. Goodman in the examination of one thousand clandestine or professional prostitutes found that fifty-four per cent were infected with syphilis and ninety-three per cent with gonorrhea. The victims of this great menace are, in a high percentage, our future citizens, raised by loving parents, who have taken every care to protect them and warn them of every danger except, either through ignorance or prudery, the one great danger which confronts most every youth. It is an act of justice, no less than one of self-preservation, that society should allow no boy,

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young man or young woman to enter into promiscuous sex relations without a clear knowledge of those dangers to which he or she is exposed. Loose training and the economic necessity of postponing marriage are to be considered as factors in increasing promiscuous sex relations, with its inevitable result. One physician stated that three-fourths of his venereal cases gave similar history of having acquired their infection on joy rides at night where bootleg liquor played its part.

Methods of Prevention

Education has proven to be the greatest factor in modifying the venereal disease rate. Its full benefits will come only when every educational agency is enlisted in the cause and the facts carried to every American home. Early instruction bites deep and helps to form convictions which will stand against the assaults of later life. The greatest safeguard against infection is chastity. There is today, so far as I know, no real opposition by medical men to the statement that continence is perfectly compatible with health of body and vigor of mind. However, teaching, based on moral issues alone, is faulty. Schools then should include, with anatomical and physiological facts, the results and dangers of venereal diseases. It is erroneous to assume that even a large majority of boys will reach the age of twenty-five without having had sexual experiences. Obviously the educational propoganda must reach the adult population through lectures and literature, such as those used in the program of the United States Public Health Service. The educational program has already proven effective in the respect that those with new infections are coming for earlier treatment, and many chronic cases are returning for treatment. As evidence of this fact, in 1916 the ratio of tertiary to primary and secondary lues reporting for treatment was 1.6 to 1, whereas in 1921 the ratio was 2.7 to 1.

Prophylaxis has engaged the attention of many, but should be relegated to a position subordinate to educational training. Its advocation might have several undesirable effects. First; that it suggests a moral sanction to vice; second, that it gives a false sense of security and may lead to more frequent exposure; third, that it may deter the individual from seeking early advice or treatment; and fourth, that it may be used for treating the disease, should it arise, and so delay skilled treatment in the early stage when professional care is most needed. At best it is only "shutting the door after the horse has been stolen."

As medical counselors of the American public, the physicians must recognize their responsibilities in this problem. If my observations are to be depended upon, the large majority of the medical fraternity is not making a sincere effort to support the program of the United States Public Health Service. Some physicians consulted in such cases, treat the condition lightly, prescribing perhaps a bottle of medicine with casual instructions to let the patient go and fight it out alone. Such treatment is unprofessional and deplorable. It either means that the physician is not equipped to care for such cases, or that he does not fully recognize the gravity of his responsibility, or the necessity of clinical observation. The tendency to depend upon a pathological or bacteriological examination is obviating the importance of clinical investigation at the hands of the doctor. This necessity, however, is indicated by the following facts:

1. That the treponema pallidum can be demonstrated averagely on dark-field examination in only sixty per cent.

2. A negative Wasserman means nothing, while a positive Wasserman is only strong presumptive evidence that a patient has syphilis. A positive reaction does not necessarily mean that the lesion in question is syphilitic; that the patient is actively syphilitic or that he requires treatment.

3. Owing to the varied morphology of the Bacillus Ducrey, and to the difficulty encountered in demonstrating it, examinations of scrapings are, in most cases, futile.

4. In subacute, chronic or recurrent cases of gonorrhea it may be impossible to demonstrate the gonococcus in more than fifteen per cent of cases.

The effect upon the patient is most unsatisfactory, for it minimizes the seriousness of the condition and sanctions the responsibility of considering himself well, when such is too often not the case. Here it may be pointed out that it is all important that the physician report all cases, so that they may be effectually followed up by the social service of the Public Health Department. The physician should so fully recognize the necessity of this feature of the venereal disease program that legislation requiring every physician to report would not be necessary.

The psychology of some of the venereally infected is remarkable and menacing. Despite the knowledge of their condition, they

carry on seemingly with a spirit of vengeance. Nothing can cope with this type except detention, which a number of our states are now using effectively.

Free clinics are a national necessity to care for and educate that most unfortunate class of society who cannot pay.

The state legislatures could express no stronger endorsement of this anti-venereal campaign than to strike a vital blow at the patent medicine and nostrum vender, quacks and the practicing druggist.

To be sure, nothing new has been brought forward, but it is my hope that I have reminded you that the weapons we have had will still prove effectual if we use them.

DISCUSSION

Dr. Hardie R. Hays (Jackson): I am very glad Doctor Hennessay has brought up this subject at this time. We have been trying to do a work in which we have been very much handicapped by a cut in our appropriation for last year's work, and it is only through the loyal support of the medical profession that we are going to be able to go forward in this work of controlling venereal disease.

Doctor Hennessay brought up the economic loss. So often we have considered venereal disease as a question that should be dealt with by the preachers. In fact, one of the legislators said to me: "If you would go to preaching I would be glad to help you out, but it is a condition to be handled by the preachers." Let us divorce such work, if we can, from the preacher's work, and let us face it as we would any other contagious disease, just as if it were smallpox, or typhoid, or anything else that is a cause of economic waste. I daresay there is nothing today that is costing the people of the State of Mississippi more than is venereal disease. Yesterday I was talking to one of the malaria control men and he brought up a new phase to me. He said we are going to have to control hookworm and syphilis in order to control malaria, so intricate is the problem. In our big sawmills, in our railroads and industries and all the way along we are getting losses right straight along from venereal disease. A person may not be incapacitated, he may be able to carry on, but when that person who seemingly is able to carry on becomes hurt or devitalized in some way it appears that he is completely knocked out and his syphilitic condition asserts itself and causes a great deal more of a loss than if he had not had this disease before overtaken by the accident.

The statement was made in the paper that venereal disease probably had increased. It would seem from the information that we have at hand here that it is not increasing, but that there is more venereal disease treated than ever before. That was brought out in the latter part of the paper where the number of new cases, that is, the number of primary lesions reported were decreasing. We are striving in every way possible to get the person infected with venereal disease under the doctor's care. When we began the work in this State the majority of people infected with venereal disease were going to druggists and getting a proprietary remedy or something of that sort, and you would be surprised to see the people who were well educated that were going to this source for treatment. But now I think we have gotten into the hands of the physician a large majority of these cases.

Another point is that we lose time by writing a patient to go to his family physician for treatment. He sends back a letter: "I went to my family physician and he says he does not treat this disease." And when a person is turned down by his family physician he does not know where to go. So I want to make an urgent plea that if you will not treat these diseases then please get the patient safely into the hands of someone you know is competent. If these men came to you for appendicitis you would not say: "I am not a surgeon." You would give them the advantage of your knowledge of surgeons and put them into the hands of some competent surgeon.

Dr. William L. Little (Wesson): I want to stress the prevention of these diseases. Doctor Hays said someone said to him if he was a preacher they could get together. I think we should act with the preacher and have him act with us. If we expect to prevent these diseases we must, as medical men, stand for what is right in our community. We should co-operate with those who try to prevent the sale and manufacture of whiskey, as intemperance often times leads to vices that increase commutable diseases. We should ever stand for the right in upholding the law. We should urge the public school teachers to asssist Sunday school teachers in having the people attending church and Bible classes. I think that is the way to prevent these things—we should teach by example, living close to the narrow way. If we do that we will have less of these things.

Dr. William H. Frizell (Brookhaven): As far as Doctor Hennessay expressed an opinion as to the moral side, there is more moral side than anything else. We should not begin with any preacher, or any society, or anything else of that kind. Those of us who have boys should speak to them. It is the mother's duty to speak to her daughter.

I have been practicing medicine a good while, and all the venereal disease is not among men and boys primarily. Neither is it due to blind tiger whiskey always. Blind tiger will excite the mind, but so often it acts as a depressant upon one's desires. I should not begin with the preachers and teachers. The preachers can never control venereal disease. It is to be done in the home. Our troubles, moral and otherwise, begin around the hearth, and it is our duty, as fathers and as physicians, to instruct the boys. A boy can live a life of continence if he will.

Doctor Hays said he was sending them back to the family physician. Some of them were driven away from us by the Public Health Service compelling us to report cases, but they are coming back, and we find that some physicians are reporting four or five cases of syphilis, new cases, where they did not report that many cases in five years before.

Dr. Robert S. Curry (Jackson): I have some

knowledge of the conditions in this State, and I believe this is one of the most important papers that has been brought before the Mississippi Association. These diseases are far-reaching in their baneful effects upon the health of the people and are causing perhaps as great economic loss as any other diseases in the State. The production of these diseases is so interlinked with the moral situation that you can hardly divorce it from the moral anl religious conditions. Everybody knows that the doctor primarily is the man who has to control this situation. We know that the minister cannot do it unless he has the support of the medical man, but everybody sees hope in the fact that now the doctors in the State of Mississippi and in the country at large are willing to co-operate with other agencies for the prevention of these diseases.

It is alarming to me to know that 80 per cent of the operations on women are due to venereal diseases. That is a deplorable situation. I believe the educational campaign that is now being carried on will go far toward remedying this situation. I cannot understand why, if you take a young mind at the impressionable age and teach it wholesome facts about this horrible condition and the great trouble it brings—I cannot understand how these facts will ever be removed from that mind.

Dr. Russell A. Hennessey (closing): There were a few points brought up in the discussion which I would like to correct.

I did not wish to minimize the clergyman's position in this venereal disease problem, but wished to imply that teaching along spiritual line has had its opportunity and has not, in my opinion, proved effectual. It is for this reason that I offered the suggestion that in the educational program venereal disease facts should be taught in connection with anatomical and physiological courses. This, I believe, will impress upon the young mind the dangers of venereal disease and prove more valuable than moral training alone. I think the doctors, realizing their responsibility, might volunteer to take part in the school programs or proffer their information in any other educational way. Family education and just what part the father and mother take in this question is of no small importance. Certainly, they cannot impress upon their prodigy in an intelligent manner anything about the dangers of venereal disease until they first have comprehensive information. The ignorance of the majority of fathers and mothers concerning this everlasting menace is most appalling. The only way they will be reached is through national educational programs, sponsored by the U. S. Public Health Service.

It has been stated that some doctors failed to report their venereal disease cases because the knowledge of reporting drives from them prospective patients. This will have to be overcome by intelligent instruction of the patient in the necessity of reporting to prevent venereal disease and thereby avoiling another misfortune such as they are seeking relief from. It should be explained that these cases require control because they are a menace to society, and that they are reported by number rather than name unless it is necessary to apprehend them. Every ethical doctor will recognize this necessity and his responsibility in this great problem to report all cases and thereby obviate the necessity of state legislation to enforce reporting.

THE EYE AND THE CLINICIAN*

T. J. DIMITRY, M.D.,

NEW ORLEANS

I am dissatisfied with the explanation offered for the cause of a great number of eye pathologies, and I am of the belief that these diseases are improperly handled through neglect to search out for factor productive of condition, and further; charge specialists with treating local manifestation as self subsisting entities. If the specialist is to find the etiology of a morbid condition, he then will be compelled to broaden his study and to change his deductions from a limited view, to a greater expanse, if he hopes to reason logically from cases and not from effect.

You will admit with me that the body of man is as a labyrinth and with a study of its diseases we add increased difficulty to the pussle, and though we be conversant with one or more of its secreted traps we can but remotely hope to discover the minotaur if we have but a knowledge of a part. The monster strikes, hides remote and continues to repeat the assault until the body elements find him unwelcome and destroys, or until he is discovered by those practicing the medical art.

Has it ever occurred to you, how few diseases are primary, i.e. if you exclude trauma, malignancies and infections? Has it ever occurred to you how often we treat effect and not cause? This query is the reason for my contribution, further, with a desire to stimulate investigation, thoroughness of examination and to use logical deduction in explanation of disease.

Ophthalmology is a specialty of a part, the eye, if we should assign to this part a self subsisting or developed morbid entity per se, we admit thereby that the condition has arisen by chance, a mishap or a throw of the dice. I question that there can be found a single morbid entity for the eye of the many eye pathologies, and further claim that idiopathy, defined as a morbid state, not produced by a preceding infection, is a misnomer. My confreres might admit that my postulate is correct but add that my contention is equally true for other parts of the body; the skin, the bones, the thyroid gland and the appendix, etc.

Disease of the part is an expression from

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the whole or from another part. It may be transmitted from a part to another part but the original cause is not within itself. The reason the branch of the mighty oak fell was that the worm was within the bud.

"Admit this truth that naught from nothing springs, and all is clear."

Then can you see with me the necessity for broader medical knowledge for the specialist, and why he should neither be isolated or isolate? You will admit with me that a part for instance the eye is dependent upon the whole, and that the principle of life is that the parts are mutually dependent and contributory to each others function.

"Look round the world: behold the chain of love
Combining all below and all above.
See plastic nature working to this end;
Atoms to atoms—clouds to crystals tend.
See dying vegetable life sustain;
All served, all serving, nothing stands alone
The chain holds on and where it ends unknown."

If the study of disease is a study of a part then the most painstaking examination is incomplete, if it is of the part alone. The good clinician delves into the trunk while the specialist is assigned the part, if either separate from the other, he is neglectful of a complete examination. General medical knowledge should continue to be ruled essential for the acquiring of a specialty and the specialist should rule that his general knowledge should increase in concert with his special knowledge.

The specialist should possess general knowledge plus his specialty. The clinician should possess general knowledge plus the specialties. The latter should be as it were a super physician, he should imbibe from each specialty and his broad knowledge should grant him the privilege to draw a conclusion from a maze of evidence. This ideal is not as yet and until it is it behooves both the clinician and the specialist to strive toward these stated demands.

It has been stated that the clinician is being pushed aside. It may appear so, but I see his future more promising and it is the specialist who will fall back if he should be neglectful of his general medical knowledge while increasing his knowledge in his specialty. If there is to be relegation it is to the surgeon who is qualifying himself in mechanical details and neglecting general medical information.

If any specialist adheres to the therapeutics of his limited field, he then treats effect and not cause. Can you conceive of an optic nerve being diseased because of a fault inherent in itself, or of a choroidal, retinal, or scleral disease springing into existance sine causa? Then you will admit that there is no justification of administering to the part without an investigation of the whole. I made ophthalmology pertinent but any of the other specialties would have been suitable. Many internist sees kidney disease as a local condition and we konw that the surgeon removes the thyroid without a knowledge or explanation as to why it hypersecreted. Just as the appendix is removed, using a woman logic, 'because," saying it is diseased, but not why.

I recite a few cases which will demonstrate the necessity for thoroughness and had we reasoned from cause and not effect, we would have more properly accounted for the condition.

First observation—Mrs. M. was referred by a gynecologist; he stated that the patient, one week previously had given birth to a child, that she had gone blind, and the urine contained fifty per cent albumen. Eye examination showed a fundi retinitis. She did not die, but returned one year after, condition of eye had cleared up, urine free of albumen and casts. The fundi now showed a definite choked disc. The woman died, atopsy held; the meninges were found diffused with gummata. The gynecologist saw but the pregnancy, the internist the kidney and the ophthalmologist the eye. The woman died for want of a complete investigation.

Second observation—Two children had scarlet fever, result casts and albumen. Ill nourished, multiple styes. These styes were lanced, ointments applied. The internist concluded the kidney trouble was the result of scarlet fever, restricted the diet, diuretics, rest, etc. Ophthalmologist explained styes as a hair follicle infection, in spite of the fact that his lancing and ointments did not cure. Investigation of tonsils revealed them filled with streptococci. They were removed, ill nourished children improved, styes cured and albumen and casts disappeared.

Third observation—Iritis in a young girl with a Wassermann negative. Atropine drops were used and the iritis was cured. This case was referred by an internist because the patient complained of the eyes. A few weeks after was operated on for a fistula in anus without investigation, develops coma. They then discovered sugar, ace-

tone, etc The patient died. Had the internist realized that the eye was a part of the whole he would have at least have started the investigation. The ophthalmologist was not justified in supposing and the surgeon saw but a mechanical fault. The patient was the victim.

You would not find it difficult to recite a number of such cases, all which convey the necessity for thoroughness? I wonder in these cases who was at fault. The surgeon maintained that his duty was local. The oculist adhered to his specialty and the internist saw but a local manifestation. The fault is in specializing, in which the specialist has neglected his general medical knowledge, the surgeon interested in surgical details and the internist lacks sufficient versatility to handle the situation. To correct the fault, demand of the general practitioner versatile knowledge, and assign him the title Nestor, for he should be a man preeminent for wisdom, and the specialist an adjunct to this better qualified man.

This you may say is impossible for the present. Then the specialist shall be guilty of great offense should he neglect to keep abreast of general medical knowledge.

I might have selected different eye diseases and recited faults in assigning them as entities but I have attempted to make my contention more general yet convey my message.

The ophthalmologist should advance his general medicinal knowledge in concert with his knowledge in his specialty.

DISCUSSION

Dr. Charles Bahn (New Orleans): I think we are indebted to Doctor Dimitry for presenting in such an interesting way some of the fundamentals that we perhaps lose sight of. One is, that in examining the eyes of a patient we must understand something of the human being of which the eyes are a part. Every man should understand the whole human being, not simply look at the eye.

His conception of eye diseases, that they are reflected elsewhere in the body, is a subject upon which we may differ slightly because none of us are sure. He assumes rather that the eye is like Oliver Wendell Holmes' "One Hoss Shay," that ran a hundred years to a day and then fell to pieces. I believe certain parts of the body do wear out before other parts, and I believe that we have a certain number of diseases of the eye which represent premature senility. There are certain affections which register directly and primarily in the eye.

But we are indebted to Doctor Dimitry for presnting this interesting subject and emphasizing the necessity of thoroughness and a better understanding of every branch of medicine.

Dr. Henry Menage (New Orleans): It seems hardly fair to allow a paper of such academic and educational importance go by without a word from other specialists. I consider the paper written by Doctor Dimitry of extreme importance from an educational standpoint. In our department, diseases of the skin, we have a course every year for the post-graduate men who are in general practice. In the treatment of diseases of the skin there are many of the inflammatory group which are obscure from an etiological standpoint, but the trouble is to get the men to apply the tests. If a doctor has a case of eczema he expects a prescription for it. He feels almost affronted when we tell him that we have no prescription per se for eczema. As a matter of fact, we try to emphasize year in and year out that the thing to do is to look for the cause of the condition. In dermatology we have innumerable examples of that. We are said to be behind the times because we cannot tell the cause of the major part of the inflammatory diseases of the skin.

I think Doctor Dimitry's paper is very timely, and particularly educational.

Dr. D. O. Willis (Leesville). I rise, not as a specialist, but as a general practitioner. I want to thank Doctor Dimitry for this splendid paper and the points brought out in it—the necessity of more thorough investigation and understanding of some things. This especially impressed me because I had a case in my own family. I had a son who some years ago began having trouble with his school work on account of his left eye. I found that then he could only make out a person about twenty feet away with his left eye. I carried him to some of the most prominent men all over the country, but he grew worse until he was finally totally blind in the left eye. They could find no cause whatever for it. Nobody ever suggested a cause for the blindness. About two years later that boy broke down generally in school and was given a vacation, because we found he had a case of Hodgkin's disease. I am glad to say that he is one of the few who have apparently made a perfect recovery from Hodgkin's disease. This was diagnosed by some of the most prominent men in the United States and treated by men who perhaps know more about this disease than anyone else. He made a complete recovery from Hodgkin's disease, or was declared to be free of cymptoms in April, 1917, and since that time he has been perfectly well. After he recovered from the Hodgkin's disease his eye got better and he now sees very well with that eye.

Was there a connection between the two conditions or not? We do not know.

Dr. T. J. Dimitry (closing): I desire to thank Doctor Bahn, Doctor Menage and Doctor Willis for their discussion of this paper. I might state that one of the serious faults in the development of diagnostic clinics is to find a man of ability drawing logical deductions from the evidence that may be submitted to him by his confreres. And unless we have an internist (the superman) and leave the decision with him and make of him the Nestor, we will still find diagnostic clinic work faulty.

A CONSIDERATION OF THE HEART FROM THE STANDPOINT OF FUNCTIONAL CAPACITY*

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Modern conception of cardio-vascular disease seeks to interpret the degree of functional impairment of the vascular and cardiac mechanism.

The **recognition of disease** as a disturbance of function is particularly rational in the potential or actual cardiac case. Upon the pathology of the myocardium, ultimately depends the efficiency of the individual.

The heart, acting as a force pump to sustain the circulation, holds in reserve certain physiological properties which meet the requirements of excess exertion above that necessarily entailed in the actual maintainance of circulation. This physiological attribute may be expressed as the functional capacity or power reserve of the heart. Therefore the individual physical efficiency of the heart case is ultimately dependent upon the power reserve of the heart, and heart failure expresses itself as a decrease in the functional capacity of the myocardium.

While undoubtedly certain peripheral factors, e. g. increase in peripheral resistance through passive congestion of some distant organ, contribute to a marked degree to failure of the circulation, the key to the actual condition of the vascular and cardiac mechanism is in the pathology of the myocardium.

The maintenance of physiological circulation is ultimately dependent upon the ability of the heart to do its work and the ability of the heart to perform its prescribed amount of work is in direct proportion to the efficiency of the myocardium. Therefore, confronted with the actual or potential heart case, the prime question of importance is: What is the ability of this particular heart to do its work? In other words, what is the reserve power or functional capacity of the heart?

The answer lies in determining the degree of functional inefficiency of the myocardium. Seeking methods through which the condition of the myocardium might be ascertained, many functional tests have been devised. Each of those now in general use has been subject to criticism and the present status of cardiac functional tests is a mean between enthusiastic endorsement of an optimistic school and adverse criticism of a less optimistic and more conservative group of clinicians.

Recognizing the importance of determining the condition of the myocardium in heart disease, it would appear interesting to discuss the several tests used in the functional diagnosis of the heart and through such a study seek to estimate the clinical value of the group as applicable in daily routine practice.

The present methods of complete analysis of heart function embrace (1) Certain clinical observations, (2) tests depending upon changes in pulse rate, (3) tests depending upon blood pressure studies and blood pressure variations, (4) information gained through the use of certain mechanical instruments, e.g., the polygraph, electrocardiograph, X-rays, etc., (5) Certain metabolic studies.

Observations on the clinical study of heart function would embrace the detection of various arrythmias, variations in the rate of the heart and pulse beats, certain ausculatatory signs which might be indicative of decrease in the force pump action of the heart and evidences of circulatory embarrassment in distant organs.

Among the arrythmias which are definitely known to attend or induce decrease in reserve power of heart action are, pulsus alternans or alternation of the heart, and the pulsus irregularis perpetuus of auricular fibrillation and flutter. The cause of pulsus alternans is not adequately understood, but clinical observation has given proof of the fact that such an arrythmia is indicative of gross degenerative changes in the myocardium and extreme exhaustion of the heart muscle. In the pulsus irregularis perpetuus of auricular fibrillation and flutter, overstimulation through indiscriminate and unavailing ectopic impulses leads to a waste of myocardial energy and ultimately to a loss of reserve power.

It has been stated when premature contractions are so frequent as to produce the classical pulsus bigeminus or trigeminus, that during the long compensatory pause following the premature systole, the heart is over-filled with blood, and consequently the succeeding strength of ventricular contraction must be above that of the normal, and that the frequency of such extra amount of work would ultimately lead to decrease in functional capacity. A knowledge of the normal cardiac cycle, however, would seem to indicate that during the long compensatory pause following the

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premature systole, the aortic valves are closed and pressure in the aorta falls. Therefore, even though the left chamber of the heart is over-filled with blood, pressure in the aorta is low and as a result of the low pressure in the aorta, the force of left ventricular contraction in overcoming aortic pressure would not necessarily be above that of the normal. One might rationally assume, however, that in the presence of increase in peripheral resistance, the occurrence of permanent pulsus bigeminus or trigeminus would ultimately lead to a weakened myocardium.

Of the variations in the heart rate, tachycardia assumes the greatest importance. A persistent tachycardia which does not permit of proper filling of the ventricles and produces a rapidly acting heart, entails an amount of work out of proportion to the normal demand and leads to myocardial exhaustion with decrease in functional capacity.

In auscultation of the potential or actual heart case, it has been stated that if there is insufficiency of the force or power of left ventricular contraction as a result of impaired contractility or elasticity, the aortic second sound will show a reduction in intensity following exercise owing to a smaller systolic output of blood. Likewise in right ventricular weakness, the pulmonic second sound would show a relative decrease in intensity following brief exercise for the same reason.

Of the clinical signs in other organs, stasis in the pulmonary capillaries with consequent dyspnea is classical evidence of loss of reserve power. Perhaps one of the earliest signs of heart failure is the detection of fine crepitations in the bases of the lungs. Likewise stasis phenomena, such as edema, ascites, hydrothorax, etc., are indisputable evidence of broken compensation.

In recent years, the popularity of tests depending upon variation in pulse rate, as an indication of functional capacity has increased. Such tests have as their basis, (1) The effect of changed position upon the pulse rate, (2) Effect of exercise upon the pulse rate. Numerous observers have stated that a normal slowing of from seven to fifteen beats per minute occurs in changing from the standing to the recumbent position. It is stated that this normal response is lost in decompensated valvular disease, or when the myocardium is weakened from any cause. One cannot but be impressed with the role that psychic factors might play in the employment of such a test.

The effect of exercise on the pulse rate has been widely employed as an index of functional capacity. Mendlesohn states without equivocation that the greater the amount of work done with prompt return to the normal rate, the greater is the functional capacity of the heart.

With the introduction of mechanical methods of obtaining blood pressure many tests based on blood pressure estimations came into use. Among those which have been used may be mentioned, (1) Effect of change of posture on the blood pressure, (2) Effect of exercise on the blood pressure, (3) Delayed rise of blood pressure following exercise, (4) Tiegerstedt's factor or the so-called cardiac efficiency factor, (5) Cardiac strength or cardiac weakness factor, (6) Phase variations of Tornai, (7) Effect of compression of femorals.

Crampton has stated that normally systolic pressure is increased on changing from the recumbent to the standing position, and that in myocardial weakness, it remains the same or is decreased. Recent observations, however, have raised a serious question as to the accuracy of this statement.

The effect of exercise on the blood pressure has been assumed to be an indication of the functional efficiency of the myocardium. The stair climbing test of Selig is perhaps the most commonly employed on account of its simplicity. Selig observed in a series of known heart cases, that the blood pressure rose on an average of 10 mm. Hg. per minute, while in normal cases the blood pressure rose on an average of 8 mm. Hg per minute. Concomitantly with this observation, the patient corroborates the finding by his complaint of fatigue and shortness of breath on exertion.

Recently Barringer has described an exercise tolerance test which consists of making frequent readings of the pulse rate and systolic blood pressure after measured amounts of work. A number of subjective symptoms may be noted, e. g., dyspnoea, palpitation, fatigue, precordial distress, expression and the color of the face, and the time in which the pulse rate returns to normal. In the absence of subjective symptoms, he believes that a delayed rise and a prolonged fall in blood pressure is an indication that the capacity of the heart has been overtaxed. The role of nervous and psychic influence here again offers the possibility of considerable error in the interpretation of the test.

The so-called cardiac efficiency factor of Tigerstadt has been advanced as an indication of cardiac functional efficiency. He reasons that the pulse pressure or volume output of the heart multiplied by the pulse rate represents the velocity of the circulation. The systolic pressure multiplied by the pulse rate represents the total amount of work done in the circulation. The quotient of the velocity of the circulation divided by the total work in the circulation, gives the efficiency of the heart as a pump. This is called the blood pressure coefficient and in the normal is between 25 and 35 per cent. A cardiac efficiency factor over 40 per cent or below 20 per cent is assumed to indicate myocardial inefficiency.

As an indication of myocardial efficiency the cardiac strength cardiac weakness factor has been studied by observation of the relation of the five phases heard in the auscultatory method of estimating blood pressure. Certain proportions of each phase to the pulse pressure are observed in the normal, and it is assumed that these proportions have a functional significance. The element of heart weakness is regarded as the first phase, plus the fourth phase. The element of heart strength is regarded as the second phase plus the third phase. In the presence of circulatory inefficiency the element of heart weakness progressively encroaches on the element of heart strength. In cases of serious functional impairment, no phases may be shown or one phase may be lacking.

Tornai in studying blood pressure estimations by means of the auscultatory method describes six separate and distinct phases and upon certain variations in the relationship between these tones to each other, he bases his cardiac functional test known as the Phase Variations of Tornai. He states that in healthy people an arterial murmur is normally heard in blood pressure readings. In the normal heart this murmur has a normal variation in duration and position after moderate exercise. After brief exercise in healthy persons, the murmur increases in duration and approaches the maximal point of blood pressure. After the lapse of three to five minutes, the heart returns to its normal phase relation. After fatiguing exercise, the maximal and minimum pressures fall and the position of the murmur is lower in its relation to the maximal point. Therefore, if after brief exercise, the arterial murmur begins higher and nearer the maximal pressure, and no fall has occurred in the maximal and minimum pressures, it may be assumed that the heart is sufficient in its reserve power to perform the prescribed amount of work. In myocardial inefficiency, the arterial murmur is lowered.

Reasoning from the experiments of Marey and Weber, who found that the blood pressure in normal animals increases after ligation of a large artery or compression of the abdominal aorta without increase in the heart rate, Katzenstein devised a cardiac functional test which is based upon the assumption that if peripheral resistance is increased, blood pressure is raised in the normal, but no increase in heart rate occurs. The strain falls directly on the left heart as a result of increased ventricular output. His method consists in ascertaining the blood pressure and pulse rate at absolute quiet and rest. Both iliac arteries are then digitally compressed from two to three minutes, and the response of blood pressure and pulse rate ascertained. From numerous observations, the following standards have been deducted. (1) In normal compensated hearts, after compression of the iliac arteries, the blood pressure rises five to fifteen mm. Hg and the pulse rate falls. (2) In hypertrophied compensating hearts the blood pressure rises 15 to 40 mm. Hg and the pulse rate falls or may remain unchanged. (3) In beginning decompensation the blood pressure remains unchanged while the pulse rate increases. (4) In cases of cardiac decompensation, the blood pressure falls while the pulse rate increases considerably.

Here again, the psychic factor as a result of pain upon compression of the iliac arteries, may produce considerable error in the accurate interpretation of the test.

The recent introduction of the electrocardiograph has aided materially in establishing the prognosis of various heart lesions and establishing the actual condition of the myocardium in suspected heart cases.

Through the use of the X-rays, attention was called to a so-called myocardial retraction reflex which consists of a contraction of the myocardium of varying duration as a result of percussion of the spinous process of the seventh cervical vertebra or irritation of the skin of the precordial area. In myocardial degeneration or large dilatation, this reflex does not occur.

Certain metabolic studies have been regarded as an index of cardiac functional capacity. Upon the principle that the concentration of the urinary ingredients de-

pends upon the velocity of the circulation, it has been asserted that under certain prescribed conditions of diet and exercise, the molecular concentration of salt in the urine as measured by the freezing point may be regarded as a test of circulatory efficiency. With reduced circulation, there would be a decrease in sodium chloride concentration and with acceleration an increase. Recent experimental work, however, has tended to prove the inaccuracy of such a test.

Brettingham and White, after a careful analysis of various cardiac functional tests, selected two which gave promise of the best results, viz., the determination of the vital capacity of the lungs as an index of myocardial efficiency and exercise tolerance tests with observations of the effect on systolic blood pressure. After a series of very careful observations, they came to the following conclusions. "Vital capacity determinations add to the exactness of records but give little aid in the clinical study of a patient." "Exercise tolerance tests are applicable to a limited type of case, but even there give little information of the actual cardiac condition." They found vital capacity and exercise tolerance determinations to be markedly at variance in 14 per cent of the cases in which both tests were performed.

From the above analysis of cardiac functional tests now in use, it may be assumed that no one distinctive test adequately expresses the actual condition of the myocardium. The complimentary action of the vaso-motor system and physiological action of muscular tissue are factors of prime importance in maintaining circulation. These factors vary and are different in different individuals and it is such difference and variation which produce the greatest source of error in seeking to determine the efficiency of the circulation.

While it may be stated that no one test may be taken as a criterion of cardiac reserve power, the group employment of certain practical tests, together with careful clinical observation and examination, yields information of decided value in the prognosis and therapy of heart disease.

DISCUSSION

Dr. W. A. Dearman (Long Beach): The question of cardiac functional capacity with its vascular supply is one that is extremely interesting. I may say at the outset that I look upon Doctor Rowland as one of the most competent cardiologists of the day. I think he should be in New York practicing cardiology.

He has outlined the various tests that we may employ to test the integrity of the heart muscle with its vascular supply. A man may be feeling well apparently, not having any subjective or objective symptoms of cardiac trouble, and he may drop dead at the breakfast table. This may happen after he becomes angry, after a full meal, or after violent exercise. I have attempted through several years to classify my cardiac cases with reference to functional capacity of the heart, because we do not know how much the heart will stand under various circumstances. It is remarkable how a man can live for years and years with a decompensated heart, and yet another man at middle age will drop dead at the least provocation. It is a serious situation and brings out the point that the doctor, while conserving the health of his patients, should also pay some attention to his own heart, because we, like our patients, are subject to these same maladies and disorders. The doctor has long hours, he works mentally and physically; some are great eaters, and some use coffee and tea and coco cola excessively, and are tobacco users. What will happen to you in middle age? It is said that cardiac disease has caused more deaths in the United States than any other disease. Bear in mind that the dangerous heart is the murmurless heart. We pay very little attention to a murmur if the heart is well compensated.

Rest, and rest alone, is the remedy for heart disease. Digitalis, to my mind, has a place, but not in the treatment of all the cardiopathies.

I think a patient should be advised as to the condition of his heart, even if you have to tell him he is liable to drop dead. It is well to give him all the information possible, and if he is a man who is lifting heavy loads, have him change his occupation. I tell many that when the heart is working at ordinary capacity it does as much work during the twenty-four hours as it would require to raise a ton a mile high; but when at rest mentally and physically, it only has to raise that ton a foot high.

I think when a man gets to forty he should change his mode of living, and he should eat less meat. So it behooves the doctor to conserve his health and welfare as well as that of humanity at large. We must make sacrifices. Our work brings on premature old age, degeneration of the arteries and of the heart, and finally we fall victims to cardiac disease that from the onset is not so noticeable, but is dangerous in the end.

I always instruct a patient never to crank an automobile, never to run up or down a grade, never to do anything to put extra strain on the heart muscles. These patients should never run up or down stairs; never overload the stomach; sleep until 9 a. m.; go home at 3 in the afternoon. All these are valuable assets to the patient suffering of heart disease.

Dr. N. S. Stern (Memphis, Tenn.): This paper is excellent, yet from a practical point of view these tests by their very multiplicity show that none is satisfactory. The best way to test the funcional capacity of the heart is to study the patient's history carefully—not so much what you find on physical examination, but what the patient tells you—how much exercise he has been accustomed to take, and whether it brings on faintness or shortness of breath. If a man gets short of breath sooner than he used to he is beginning to suffer from myocardial insufficiency. If a man gets faint after exercise that he formerly could do with ease, he is beginning to suffer from this condition, provided that certain other

things are ruled out. Tuberculosis, for instance, will run a patient down, cause disability, and sometimes dyspnoea. But if such things are ruled out, then you can gauge the capacity of the patient's heart by what the heart can do. If a patient can do a great deal without any of these symptoms, then the capacity is good; if a patient can do little, the capacity is poor, even though the physical examination is negative.

In cases of angina one very often finds a completely negative physical examination. The pulse rate and blood pressure is normal; there will be nothing from which you can judge except the subjective symptoms of the patient. If you let the patient go because his physical signs are negative you are doing a dangerous thing. You must base your prognosis upon the patient's age, upon his reaction to exercise. That is the most thorough and accurate method of determining the functional capacity of the heart.

There are other subsidiary methods, particularly of value with regard to prognosis. As the essayist says, the myocardium is the thing we must study carefully; it is the active portion of the heart; it is what does the work. The valves are subsidiary. But if certain factors tend to increase the work of the heart muscle, then these factors tend to create myocardial insufficiency. High blood pressure creates an additional burden for the heart. Valvular disease with leakage is something the heart has to overcome. The same thing is true of the disorders of the rhythm of the heart. They are important only so far as they interfere with the capacity of the heart to do its full work. Prognosis must, therefore, depend upon how serious each one of these is in its effect upon the myocardium. Many times the myocardium has a wonderful come-back. That is particularly true in mitral stenosis. Patients with this lesion may break six or eight times before they finally go to pieces. Etiological factors likewise have reference to prognosis. But the important thing to remember is that the myocardium is the chief factor to be taken into consideration. If you study your patients well you will be able to arrive at a fairly accurate conclusion as to what the myocardium will do.

Dr. Whitman Rowland, Jr. (closing): I am absolutely convinced that the individual functional capacity of the myocardium varies at different times with the individual. Why is it that there are so many diagnoses of acute indigestion? The reason is that after a heavy meal the extra strain is thrown on the heart. A lowered functional state fails to meet the strain and acute dilatation occurs.

I am furthermore convinced that the individual capacity of the individual heart may be strong today and weak tomorrow. I am not prepared to give experimental work to support that statement, but I believe it is true.

I am not interested in the heart itself from the standpoint of the gross lesion so easily detected, but I am particularly interested in the heart that apparently has nothing wrong with it and the next thing you know there is a funeral. A patient not long ago—a man who went home to his midday meal complaining, not of heart symptoms, but simply complaining. He came back to his desk, started to do a piece of work, turned to his assistant and said: "Call a doctor." In ten minutes he was dead—died of acute dilatation of the heart. I am interested in the study of the heart as illustrated in this case.

So many things might be said that cannot be said in a short space of time. One of the practical points that might be brought out is that in certain cases of indigestion, so called dyspepsia, it is well to bear in mind the individual may have some heart involvment, a lowered cardiac functional capacity, which on careful examination may be detected.

After using the various functional tests, I am prepared to state this: a careful clinical examination of the patient, exercising keen judgment in sizing him up—the general expression of his face, the way he carries himself, etc., is of the utmost importance. The employment of certain tests to find out how he responds to exercise is valuable in rendering an opinion.

In regard to the history of the case: This indeed is of great importance, and to be most carefully elicited. However, the average person without gross cardiac pathology hardly thinks of himself in regard to his heart. You may ask him if he suffers from shortness of breath on exertion, and he may probably say yes. On the other hand a man with a badly injured heart may say no. It is, therefore, wise to put them through simple exercises and get their response.

I do believe that a careful clinical examination of the patient with a knowledge of normal physiology behind it, combined with discriminating clinical judgment, will enable one to size up a patient, and the probability is that you can not only extend the period of his life, but perhaps save it.

THE CLINICAL DIAGNOSIS OF CHRONIC PANCREATIC DISEASE*

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NEW ORLEANS.

The pancreas, frequently diseased, but seldom accused, should receive more consideration in the diagnostic survey of abdominal conditions. This organ, comparatively small, lying deep in the upper abdomen among so many very important structures, has been to a great extent inaccessible to clinical approach and, therefore, neglected. On the other hand, much evidence has been gathered for a clearer understanding of pancreatic disease by surgical and pathological observations. These studies have aided us in the determination of the frequency of pancreatitis, and in the recognition of its important relationship to diseases in adjoining organs. Pancreatitis may be a primary disease or it may be secondary to an infection elsewhere in the body. The secondary type is usually the result of biliary inflammation. Deaver and Pfeiffer have demonstrated disease in the pancreas in 33 per cent of all cholecystitis cases. Appendicitis, peptic ulcer, and the commonly recognized foci of infection, are sometimes the source of the offending

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organism. The development of pancreatitis following surgical procedures, especially cholecystectomy, has been a clinical identification for many years. Brown, of Baltimore, reported several such cases in 1918, and the writer described two cases before this society two years ago. A substantiation of this clinical observation is the very recent and striking surgical report of Judd. This worker reports on twenty-four operations which were secondary to cholecystectomy. Seventeen of this number, approximately 70 per cent, developed an enlarged pancreas that was not recognized at the first operation. The original operation on ten of these seventeen individuals was performed by Judd. These facts rather tend to discredit the belief of some that removal of the gall-bladder is the operation for the relief of chonic pancreatitis and, furthermore, in face of these findings, it would appear that such a measure is rather contraindicated. Nevertheless, one should be prompted by these excellent observations to regard the probability of chronic pancreatitis in cholecystectomized patients.

As a further emphasis of the common occurrence of pancreatic disease, it will be recalled that the routine autopsy on individuals dying from all causes shows chronic pancreatitis to be a not uncommon lesion. Notwithstanding these numerous facts concerning the frequency of pancreatic involvement, a clinical diagnosis is somewhat difficult. The symptomatology is very much like that associated with inflammation of the bile passages. There may be recurrent attacks of acute epigastric pain, sometimes radiating to the back, under the right or left costal margin. According to Deaver, referred pain is more often felt when gallstones are present. There may be jaundice, flatulency and vomiting, with a history of prolonged indigestion. In the intervals, between the attacks, the majority show subnormal acidity and occasionally (about 7 per cent) there is a glycosuria. It may be interpolated, at this point, for sake of avoiding confusion, that there is no apparent functional relationship between the islands of Langerhans and the ordinary glandular tissue; disease usually affects one without affecting the other.

The jaundice in these cases is nearly always due to an associated lesion of the liver and gall-bladder. It may be caused by obstruction of the common bile duct, resulting from pressure of an enlarged pancreas. In instances of jaundice without obstruction, occasionally accompanied by an enlarged liver, there may be another sign of diagnostic significance; namely, white stools. This stool is different from the fatty type usually found in pancreatitis. Notwithstanding the fact that considerable quantities of bile pigment may be flowing into the doudenum, as revealed by examination of duodenal contents, the stools are colorless. This phenomenon is due to a conversion of the bile pigment into white bile by a chemical change in the intestinal tract, resulting from an alteration of pancreatic function. A brief case history will serve to illustrate this point.

Mrs. J. L., age 36, was seen in October, 1923. She gave a history of having had digestive disturbances for several years. During the past two years there were three distinct attacks of biliary colic. The last two attacks were accompanied by a slight and transient jaundice. On examination she showed a deep jaundice; the liver was enlarged and irregular. The stools were almost white. However, analysis of the duodenal fluid showed that the bile flowed into the bowel and, therefore, no common duct obstruction existed. The operation revealed an enlarged liver, cholelithiases, and a greatly enlarged pancreas. There was a very appreciable improvement following cholecystotomy.

The existence of a diarrhea, without demonstrable lesion of the bowel, should always make one suspicious of probable pancreatitis. Especially is this true when there is a history and physical findings suggestive of an old biliary infection. Moreover, a diarrhea of an intestinal origin may be associated with inflammation of the pancreas. In the latter condition, the stools number from 4 to 6 a day, usually in the morning before breakfast; however, the ingestion of food at any time may stimulate a bowel evacuation. The feces may be colorless or bright yellow, containing an appreciable quantity of undigested fat, or there may be considerable undigested protein in the form of striated muscle fibres. These undigested food elements are not always present, and especially is this the case when the intestinal function has compensated for the partial loss of pancreatic digestion. Therefore, we sometimes have to deal with cases of chronic pancreatitis not having definite signs of the disease. The changes in the gland become most difficult to detect, and therefore, require additional means, other than the ordinary clinical and laboratory procedures to demonstrate the alteration of function. Wherever possible, a thorough analysis of the pancreatic secretion for its digestive activity should be made. The value of such examination was recently shown by comparisons of the findings in normal and pathological individuals. The cases of chronic pancreatitis show an in-

sufficient secretion of the gland, which is represented by partial inactivity of the enzymes in the duodenal contents. The recent investigations of Doctor Denis and I have demonstrated the close relationship that exists between the secretory function of the pancreas and the diseases of the adjacent organs. Not unlike the stomach in some respects, the secretions of the pancreas may be altered by pathological changes in the biliary tract, stomach, and even in the kidney or spleen.

Carcinoma of the pancreas, representing a late sequela of chronic inflammation and irritation of this organ is to some extent preventable. Such prophylaxis can be accomplished when pancreatitis is more often recognized and proper medical and surgical therapy applied.

In conclusion, it may be emphasized that functional and pathological changes in the pancreas proper are common conditions and that such changes account for some of the abdominal complaints that are usually laid to a diseased gall-bladder, appendicitis, or peptic ulcer. With these facts in mind, the clinician is justified more often in suspecting the pancreas and should, therefore, utilize every diagnostic means at his disposal in an effort to determine the condition of this gland.

DISCUSSION

Dr. H. B. Gessner (New Orleans): In those cases of pancreatitis which seem to be essentially chronic in their etiology, Doctor Silverman has laid stress on the connection with gall bladder disease. It seems to me that is well borne out by the experience in acute pancreatitis.

I will relate a case of acute pancreatitis seen two years ago, operated on in association with Doctor Barnett of New Orleans. The patient was a middle-aged man who was taken sick one night with acute epigastric pain, rigidity and some fever. When he was seen in the morning these symptoms were somewhat severe. The leukocyte count was between 15,000 and 20,000; polymorphonuclears a little over 80 per cent. A diagnosis of acute cholocystitis was made and the patient advised to submit to operation, which he did. On opening the abdomen the gall bladder was found a bright red color, thick, and there were evidences which we expect to find after necrosis due to pancreatitis. The great omentum looked as if it had been powdered with talcum. The white appearance is explained by the breaking down of fat; as a result the glycerin is absorbed and the fatty acids (oleic, palmitic, stearic) are combined with lime in the tissues, giving that appearance. In this case the pancreas could be palpated, unevenly enlarged. We opened the gall bladder and did an ordinary cholecystotomy. Further, drains were placed by breaking through the great omentum and going down to the neighborhood of the pancreas. The patient made a recovery and had no complications. He has been under observation for two years and has had no symptoms since that time.

I wish Doctor Silverman in closing would tell us whether he has observed a case of chronic pancreatitis which he traced directly to acute attacks of this disease. I understand that writers who have seen a great many cases of the acute condition say that some of them are fulminating and that they die in a few hours. This gives rise to the idea that apparently some are fulminating, others, like the case I saw, are moderately acute and yield to treatment, and still others are essentially chronic. I would like to know whether the Doctor has seen cases of the chronic form following acute attacks.

Dr. J. E. Knighton (Shreveport): Owing to the fact that the pancreas is such an important factor in the process of the production of digestive ferments, it is certainly timely to have a discussion of the diseases to which this organ is susceptible. Great credit is due Doctor Einhorn of New York for his indefatigable efforts in bringing to our knowledge means by which we are able to secure duodenal secretions. This, of course, has led to many interesting observations. Without the development of the duodenal tube through the efforts of Doctor Einhorn we never should have been able to make the observations that we have with reference to the function of the pancreas. Through observations that have been made by this means it has been brought to our knowledge that chronic pancreatitis is much more common than formerly thought by the medical profession.

I do not believe that I can suggest anything enlightening on the subject which Doctor Silverman has presented, but I would throw out the suggestion that we be careful in our observation of patients who have had a history of infections of the biliary passages, because I believe that a great majority of infections of the pancreas, the chronic cases ,come secondarily from infections of the biliary tract.

Dr. Thos. B. Sellers (New Orleans): We are indebted to Dr. Silverman for his recen tstudy of this subject, and its presentation in this most instructive paper.

A point I think deserves emphasis is the indiscriminate removal of gall bladders instead of draining them. There has been a tendency over the country to do a cholecystectomy almost routinely, instead of a cholecystotomy. I heard a very prominent surgeon say that a large percentage of gall bladders that should be removed are not removed, and a great many that should not be removed are removed. The reason for this is that in the removal of badly diseased gall bladders many technical difficulties are encountered, while the less diseased ones are easy to remove. It is a well-known fact that chronic pancreatitis is often associated with gall bladder disease. Therefore, unless there is a definite reason for removing the gall bladder it should be drained.

Dr. Daniel N. Silverman (closing). In answer to Doctor Gessner, I have seen cases of chronic pancreatitis that we diagnosed as such that had had acute attacks of abdominal pain, but it is nearly impossible to tell whether these attacks are due to acute pancreatitis.

In cases of acute pancreatitis, as its name would signify, there is an inflammation. It is the activity of the pancreatic enzymes which enter the glandular tissues of the pancrease itself, that destroy the gland. The proteolytic enzyme is the particular one. There must be some duodenal regurgitation into the pancreas to activate the trypsin and thereby destroy the gland.

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APPOINTMENTS IN STATE MEDICINE

The medical profession in Louisiana has had much food for thought in the gubernatorial appointments to positions bearing on the public health. Newton C. Blanchard, an able and efficient public servant, who rendered valuable services to the state as Governor and as U. S. Senator, appointed the genial Dr. Irwin President of the State Board of Health, because he had carried the Parish of Bossier for Blanchard when running for governor in the Democratic Primary. The succeeding Governor, J. Y. Sanders, appointed Dr. Dillon to the same office because he carried the Parish of Sabine for Sanders. Dillon's administration of the office was so unsuccessful that Sanders had to find a man of ability. He drafted Dr. Oscar Dowling for the place, which he filled so well that three successive Governors have reappointed him. These years of continuous service have resulted in significant improvement in State Health conditions. The Charity Hospital in New Orleans, in its turn has been recently the appointment of a man to high office for the purpose of paying political debts. When Governor R. G. Pleasant entered on the duties of his office his appointees on the Board of Administration selected for the important position of Superintendent a doctor who was handicapped by illness and who leaned strongly to the old method of Hospital administration which was discarded during Governor Hall's term of office. Fortunately, the inauguration of John M. Parker as Governor was soon followed by the selection of the present superintendent, young and able, under whom the institution is making rapid strides in the right direction.

Coming to the present time we find there are rumors afloat that Dr. Evans, psychiatrist in charge for the Hospital for the Insane at Jackson, is to be relieved of his duties by Governor Fuqua. This trained specialist has earned the good will of the sheriffs and the state by his efficient cooperation with them. It is the concensus of opinion among the psychiatrists in New Orleans that his administration has been highly successful. It appears that there are two outstanding applicants for the place, one a general practitioner in late middle life, without special training in psychiatry, the other a younger man who has recently completed his years of internship and spent a few months at Jackson under the very man whom he hopes to succeed or displace. Surely the change in either case would not be for the better. Complicating the situation is the presence of a lay manager, highly respected by all who know him. We understand it is to be the plan of the Governor to place this layman over both hospitals for the insane and to have the medical men subordinate to him. It seems clear that in the treatment of the insane, which is not appreciably by the administration of medicines but very largely through the control and direction exercised by attendant and through the influence of institutional restraint, the psychiatrist should be the commanding officer. Probably the services of a layman could be profitably employed in the capacity of a purchasing agent. But the selection of the personelle of the institution, the right to hire and fire, the general direction of affairs in such a hospital should be the duty and prerogative of the trained specialist who is at once executive and technical expert. It is our opinion that the members of the medical profession should interest themselves in this situation and endeavor to guide the chief executive of the state along the lines that make for the general welfare.

INFLUENZA AND THE COMMON COLD

The common cold is the most prevalent illness in the United States and apparently many such colds are quite contagious, few people failing to experience at least one attack during a twelve-month period, while many persons have three or more attacks during that time. These facts are borne out by data recently secured by officers of the Public Health Service in an investigation of influenza and the minor respiratory diseases which they are conducting at the present time.

That large numbers of persons have colds each year is common knowledge but just what percentage of people, as a rule, have attacks and the average number of colds per person per year have not been known, as the disease is not required to be reported by law, and, therefore, the morbidity records do not show that information.

In a preliminary report of the investigation that is now in progress, the Public Health Service shows that, among a fairly representative group of persons, only 10 percent had no colds, while 90 per cent had one or more colds during a five and one-half month period; the rate for the group as a whole for that period being 1.9 cold per person, or an annual rate of 3.7 cold per person should the same rate obtain throughout the year.

The cold was found to be the predominant form of respiratory attack. The relative frequency of symptoms was shown to be very much the same for all localities, and the epidemic outbreaks occurred apparently at about the same time of year in each locality. An outbreak of colds usually occurred in all localities in October, followed by a decline until the latter part of December, at which time another outbreak occurred.

It is now believed that there may be a closer correlation between the common cold and influenza than was formerly thought to exist. There seem to be cases of common cold and ordinary influenza which are almost indistinguishable clinically, and the bacteriological findings in the nose and throat of influenza sufferers and persons having a common cold are as far as the evidence goes practically the same. As a matter of fact, even in health the bacteria found in the minor respiratory diseases are nearly always present, which at once suggests that good resistance provided by physical fitness is an important line of defense, since a lowered vitality and lowered resistance favor infection. We can not depend upon physical fitness alone, however, as robust persons may apparently contract a cold from an infected person.

The investigation now being undertaken by the Public Health Service is the first nation-wide study of influenza and colds ever made, and the final results are awaited with much interest, in the hope that further light will be shed on these affections which yearly cause much suffering, inconvenience, economic loss, and, in the case of influenza, even deaths, and which, as far as their cause and prevention are concerned, are still comparatively little understood.

HOSPITAL STAFF MEETINGS

Hospital staff organizations—comparatively of recent date in this section, may, if properly managed, wield a powerful influence for good; fostered as they are by the American College of Surgeons and by the American Hospital Association, they stand for the highest and best in clinical work. The staff meetings, if devoted to actual accomplishments in the institutions, together with a study of errors of omission and of commission and of necropsies, when obtainable, are full of valuable information; if the records are properly kept and published, they make much more interesting and instructive reading than those of the average medical societies. If practicable and *when* practicable, these minutes should be published, for the benefit of those who would profit by what goes on at the meetings, to which they are not permitted, owing to not being "on the staff."

Sometime ago, the American Medical Association, in its "Bulletin," had somewhat of a symposium on "What is the matter with the County Medical Society?" One doctor said that he belongs to several hospital staffs and, by the time he attended all these meetings, he had neither the time nor inclination to take an active part in the county society proceedings. This is wrong; we believe that, in the first place, the doctor made a mistake in belonging to so many staffs, it being better to concentrate on one or two; in the second place, the hospital staff meetings do not (or should not) usurp the functions of the county or parish society, for the fields are entirely different, except insofar as both aim to promote and encourage scientific medical advancement.

We believe that these hospital staff meetings, properly conducted, are the best agents that we have in fostering good, careful work, insuring to the benefit of our patients and of ourselves.

MEDICAL ECONOMICS

Chas. A. Bahn, M.D., Department Editor.

MEDICAL ECONOMICS, VI, (MEDICAL RECORDS. PART 3)

(Continued From Last Month, Page 296)

The perfectly good time and effort devoted to useful financial records is more than justified by the benefits to be obtained by; (1) having every cent of charges, collections, investment and expense accounted for; (2) by having definite information which will facilitate a better understanding of your financial progress which is necessary to increase intelligently the quantity, quality and value of your services; and (3) by having the facts and figures necessary for the execution of income tax or other financial returns.

The average business man's successful career would be indeed short lived if he gave as little thought to the practical understanding of his present and future progress as the average physician. The principles of charging all that the traffic will bear and of hoping that the purchaser will not know whether or not he has gotten value received, are fast going out of style. An increasingly intelligent public and more keen medical competition will necessitate the successful doctor of the future giving a full dollars worth of value for every dollar accepted and actually delivering the goods. The margin of profit is yearly becoming less in the practice of medicine which means that practical economy determines more and more the difference between success and failure. The clouds of mystery and secrecy which have apparently at times enveloped medical practice are fortunately being dispersed by the sunshine of common sense and practical understanding.

The sources of our desired financial information are; (1) the patients record cards; (2) the bank deposit book; and (3) the check book. The daily records of patients may be a card, a sheet, a page of a book on which is noted the date and amount charged for each visit or service, and the date and amount of each payment, as well as each patient's monthly balance. In a small practice the patient's daily record may be used as the only record, if the above information is contained. In a larger practice, a more permanent record such as a separate cash card etc, with or without an intermediate day sheet may be advisable.

The bank book contains every business day's deposits and corresponds with and is a control on the days collections or cash receipts as recorded on the patients daily records and in the check book. It is essential that every cent of each day's cash receipts be deposited in the bank, preferably during the next banking day. The bank book should also furnish the monthly bank balance which is a control on the total cash receipts and disbursements. The check book should show the daily and monthly disbursements.

I have selected as a standard financial recapitulation medical form "Multicolumn 50-8D" because from personal experience I know, (1) that properly arranged, it can be made to contain all necessary practical financial information desired; (2) its execution requires but a few moments daily; (3) its use does not necessitate special training in bookkeeping; (4) it can be adapted to any medical practice; and (5) the forms are inexpensive and can be purchased from any commercial stationer.

The first column on the top is for notation of each day's charges. Deductions or allowances are to be subtracted preferably on the side or below, the difference representing the principal figure. In installing this system it is of course necessary to determine the exact amount of outstanding charges. If unknown, its amount will probably give you a healthy shock.

The second column is for each day's collections or cash receipts which corresponds with the total payments of the daily patients records and bank deposits. Checks should be entered as of face value and exchange charged under miscellaneous expense.

The third column is for the daily bank balance. This represents the previous day's bank balance plus the next day's collections from which is subtracted the same days disbursements in total.

The fourth column contains the total of disbursements or what is paid out. This position is used in order that the daily collections, bank balance and disbursements may be together, which is of material practical advantage in determining the daily bank balance.

The fifth column is for the number and the payee of each check as well as any notation such as its special purpose etc., which may refresh memory when income tax time comes around.

The next three columns include a classification of disbursements based primarily on permanency because this largely determines the investment and depreciation factors which are important in financial statements and tax returns. The first of these columns is for equipment, that is disbursements for more or less permanent property usually with a life of three years or more. With the exception of automobiles 25-33 per cent, the Federal Government last year I believe, held that 15 per cent was a fair average medical equipment depreciation, which means a life of six years. This includes tables, desks; typewriter; cabinets; electrical devices, except globes etc., and surgical instruments, except those of short life. The next column is for the amount of disbursement of a less permanent character, usually less than one year life. These are usually consumed in about the same amount as purchased thereby obviating the necessity of inventories other than at the installation of the system. Under supplies are included stationery, dressings, towels, electric globes, instruments of short life, postage stamps and other similar articles. The third or last column under disbursements is here called Expense which means any disbursements for which nothing tangible or material is received in return. This includes, salaries, telephone exchange, electric lights, withdrawals, taxes, etc. The last column is for special notations such as personal withdrawals etc.

Where the doctor issues less than thirty-six checks per month one page may be used for an entire month. The date and number of checks will show the day's disbursements in which they are

Daily Recapitulation Record Adapted for Physicians' Use

De Luxe Multiplex Columnar Form 1040

Date	Income		Bank Balance	Disbursements	DISBURSEMENTS						
	Charges	Collections		Total	Check No.	Date	Payee and Purpose	Equipment	Supplies	Other Expense	Remarks
1											
2											
3											
4											
5											
6											
7											
8											
9											
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35											
36											

(This Form shown and supplied by Dameron-Pierson Co.)

to be included, several checks often being written on one day. If the number of checks issued in a month are less than seventy-two it is advisable to use one page for the first half of the month and a second page for the last half of the month; and where the number of checks issued is in excess of seventy it is advisable to use one page per week which allows space for an average of five checks per day.

Both cards and books may be adapted for physicians office records. Cards vary in size from the small three by five standard office form, to the large and somewhat complicated cap sized forms of various sorts forming part of a more or less complete system as devised by the "College of Surgeons", and advertised in "The American Medical" and other journals. Record cards have the advantage of accessibility, that is records most frequently used can be most easily located, while record books have the advantage of not being easily lost.

Personally I prefer a five by eight folder card, that it is a ten by eight record folded once, thus giving the standard five by eight size for filing cabinets. This form and size has the advantage of not being too large or cumbersome and also that information is relatively easily located, as compared with the larger and more complicated record forms. With the insertion of filler sheets, all possible information that may be required in the longest and most complicated case may be noted, yet it is not too large for the simplest and briefest record.

In theory a blank record has the great advantage that all of its space is available for any information that may be desired because the component parts vary greatly in amount and ratio to each other. Printed records have the advantage that one may know where to look for a given bit of information by its classification. After a rather varied experience I have come to the conclusion that the place for examination methods is in the examiner's head and not printed on the record card. The general headings for information are; (1) administrative, containing name in full, address, number, date, age, occupation etc; (2) the patient's statement, or history; (3) the objective findings, or what the doctor actually knows as fact; (4) treatment, mental, physical and chemical, (5) progress, (6) less revelant medical information such as the examination reports of other doctors, etc; (7) the diagnosis, or the doctor's name of the sickness; (8) the financial data such as the date and charge for each service or visit, and the date and amount of each payment; (9) other administrative information such as the sender of the patient, the person to be billed for the services, the physician who may be treating the patient, the number and character of reports, etc. Each of these subdivisions should be allotted sufficient average space and if more is needed, filler sheets are used. As far as possible practical notations most frequently used should be written where they will be most easily seen.

Personally I prefer the front outside page for the first general information, name, age, address, number, etc; (2) the history; (3) the objective findings; (4) the diagnosis; the back outside page for the financial statement and administrative remarks; the inside front page for less frequently used medical information such as progress, etc., and the back inside page for less revelant information such as the reports of other physicians, other examination reports, correspondence etc. This arrangement may or may not be well adapted for your use.

In the selection of a record system the most important things are that you understand definitely what information you wish to record and its fundamental classifications; and that you adapt to this a size, arrangement and class of record which meets your needs, remembering that simplicity is a vital factor in any thing which is used quickly and often. A system or method which may be a howling success in the hands of one man may be a dire and disastrous failure in those of another because the two require different adaptations of fundamentals. The installation and maintainance of record systems cost time and money, justified only as they prevent loss of more time, effort and money and furnish information which is more than worth what it costs.

Some prefer bound books for financial records because of the decreased likelihood of loss. Presuming a reasonable amount of care, I have found that looseleaf cards, properly filed and accounted for, are seldom lost and have the advantage that those more frequently used can be more easily located. I prefer the five by eight size for both history and cash cards for aside from other advantages they can also be filed together when placed in the permanent files.

It is generally advisable that current cards, those of patients under treatment, be filed alphabetically and noncurrent or permanent cards, of patients not under recent treatment, be filed numerically. The alphabetic filing is the simplest and best adapted for five thousand or less records. For a larger number of cards the numerical filing is perhaps preferable because certain names occur with such great frequency that it may be difficult to easily locate one of the Jones, Smith, or Brown family. Numerical filing necessitates an index book or sheet containing the full name and serial number of the patient as contained on the history and cash card. This means that the name and number must be written three times for each new patient. This type of filing is capable of indefinite expansion with the slight exception that bound record books printed for this purpose are usually limited to thirty-five thousand names. In our office history cards are kept in the current or alphabetical file until the first of the third month after the patient was last seen; cash cards, until the account has been paid. The history and cash card are ultimately placed together in the permanent file in serial order.

On the several methods of transcribing records the following may be said:

1. Ordinary hand writing has the advantage of simplicity, possible legibility, and of not requiring special equipment, but has the disadvantages of being slow, usually illegible.

2. Shorthand dictation with typewriter transcription has the advantage of perhaps being the fastest method under favorable conditions, but unfortunately these do not always exist; either the dictator does not speak fast, distinctly, coherently, or understandingly; or the dictatee does not possess the necessary knowledge of shorthand, as applied to medical terms or the coordination of brain and hand, or the familiarity with the shorthand signs, which soon become arctic in coldness. The record must also be taken out of use for the notations to be entered either directly on

the record or on paper slips and pasted in the record. In general this method is adapted only for the most experienced stenographer and dictator.

3. The dictation of records on the typewriter is apparently the most widely adaptable record method, because the record can be kept apace with the patient, assuming that it is promptly dictated and the physician can therefore use it to greater advantage. This method requires for its success a fast typist familiar with medical terms.

4. Machine dictation and typewriter transcription is apparently successful in medical records only with highly trained assistance. Medical dictating machine operators are apparently somewhat difficult to obtain and the transcription of records necessitates their being out of practical service for a time whether the notation is made directly upon the record or through the medium of thin paper pasted or pinned to the record.

The printing of the history and cash cards, daily list of patients, etc., with the exception of the daily recapitulation record, which, accompanies this installment are being omitted because of the attendant cost. Should anyone be sufficiently interested to desire further investigation of office record forms, I will be pleased to review the subject with them and to assist from my collection in the selection of the most practical system.

Next month we will discuss income tax returns, a subject which is dear to our pocketbooks, if not to our hearts.

Our efforts in trying to help you help yourselves in a practical way are not receiving enough criticism which means either you are harder to awaken than we anticipated or that our presentation is faulty. Which is it? Write us, we want to know.

Address communications to Dr. Chas. A. Bahn, 1551 Canal St., New Orleans, La.

NEWS AND COMMENT

Lucien A. Ledoux, M. D., Department Editor

"Every man owes some of his time to the upbuilding of the profession to which he belongs."
—Theodore Roosevelt.

MONTHLY BULLETIN SHREVEPORT MEDICAL SOCIETY, JANUARY, 1925

January meeting of the Shreveport Medical Society, January 6th at Charity Hospital at 8. p. m.

January scientific program: Hiccoughs, by Dr. J. D. Young. To open discussion Drs. Herold, Kerlin, Bodenheimer, Douglas. Reports of other clinical cases.

Secretary-Treasurer Report

Durnig the year 1924 there have been added to the roll of election and transfer nine new members: Drs. H. A. Durham, L. W. Gorton, M. D. Hargrove, W. P. Lambert, N. G. Nasif, C. W. Phillips, W. M. Scott, J. W. Winn, R. C. Young.

Lost by transfer or resigned, three: Drs. D. S. Marseilles, L. C. Spenser, W. B. White.

Dropped from the roll for non-payment of dues, three: Drs. A. B. Bugg, A. D. Hatcher, C. H. Pardue.

Gained 9, lost 6, leaving net gain of three.

In the twelve months closing with last meeting there were eleven meetings with an average attendance of 37. Twenty-six members did not attend any meetings last year.

When all the checks are in and money on hand is deposited there will be a balance of $93.94 and one fifty dollar Liberty bond.

1924 dues have been paid by all members except two, Drs. C. Blume and E. E. Simpson.

Election of Officers.

Dr. Ragan read the nominations of the Nominating Committee. The president entertained nominations from the floor.

Dr. Barrow made a motion that the Nominating Committee be thanked and that nominations be made from the floor. Motion seconded by Dr. Hendricks. Dr. Bodenheimer announced that such procedure would be unconstitutional. Motion lost.

Dr. Hendricks made a motion that a nominee must have attended nine meetings during the year, as was required in 1912. There arose the question as to the constitutionality of such pre-requisite since the adoption this year of a revised constitution and By-laws.

Dr. Barrow made a motion that the presence at nine meetings requirement for nominees be set aside. The motion was seconded and passed by vote of thirty-five for and four against.

For president Dr. Hendricks nominated Dr. A. P. Crain. Drs. E. L. Sanderson, John L. Scales and A. P. Crain were voted upon for President, Dr. E. L. Sanderson was elected on the first ballot.

For First Vice-President Drs. T. D. Boaz and A. P. Crain were voted upon. Dr. A. P. Crain was elected.

For Second Vice-President, Drs. M. S. Picard and F. H. Walke were the nominees. Dr. Picard being forced to be out of town at the moment. Dr. Walke requested permission to withdraw his name in favor of Dr. Picard who was elected by acclamation.

For Secretary, Drs. D. L. Kerlin and R. T. Lucas were the nominees. Dr. Kerlin withdrew his name in favor of Dr. Lucas who was elected by acclamation.

For Treasurer, Dr. Boyce nominated Dr. J. R. Stamper. Drs. Gallaway Erickson and Stamper were voted upon for Treasurer. On the first ballot, Dr. Erickson received the least votes and Drs. Gallaway and Stamper were voted upon. Dr. Stamper was elected, by a majority of one.

For Historian the nominees were Drs. J. F. O'Leary and F. S. Furman. Dr. O'Leary had expressed himself as not wanting the office but being willing to help. Dr. Penick made a motion which was seconded and passed that Dr. Furman be elected by acclamation and Dr. O'Leary requested to give any assistance desired to Dr. Furman.

President Butler, who unknown to the Society was practically sick, expressed his thanks for the co-operation given him during his term of office and requested the newly elected president, Dr. E. L. Sanderson to take the chair. Dr. Sanderson, who had expressed his appreciation for the honor conferred upon him announced that there would be no change in policy, except to try to get the younger members to take a more active part and an earnest effort for the Society to be a bit more parliamentary in procedure.

For delegates nominees were Drs. John L. Scales, T. D. Boaz, F. H. Walke, D. L. Kerlin, C. B. Erickson, E. Gallaway. Dr. Heath nominated Dr. Butler. Dr. Bodenheimer nominated Dr. Knighton, Dr. Penick nominated Dr. Lloyd, Dr. Kerlin withdrew his name.

Dr. Bodenheimer made a motion, amended by Dr. Herold, and passed that the highest five nominees be declared delegates and the next five alternate. Delegates elected were, Drs. S. C. Barrow, W. P. Butler, T. P. Lloyd, John L. Scales, J. E. Knighton. Alternates elected on the first ballot were Drs. T. D. Boaz and F. H. Walke. Elected on the second ballot Drs. C. B. Erickson and E. Gallaway.

Dr. Ragan called attention to the fact that the President has authority to name delegates to take the place of absent delegates.

Dr. Butler made a motion which was seconded and passed that a committee be appointed to draw up an application for membership form.

Dr. Herold called attention to the necessity for getting in dues for 1925 before the first of January to get the protection in mal-practice suits which goes with paid up membership in the State Society.

Dr. Walke called attention to the Tri-State Medical Society meeting here January 14th and 15th and made a motion which was seconded and passed that an entertainment committee be appointed.

President Sanderson announced the appointment of all committees within the next few days.

There being no further business the Society adjourned.

R. T. Lucas, Secretary.

Committees for 1925.

Ethics—Drs. T. P. Lloyd, Chairman; J. E. Knighton, A . A. Herold, T. E. Williams, I. B. Rougon.

Program—Drs. R. T. Lucas, Secretary, G. A. Caldwell, W. S. Kerlin, R. G. Douglas.

Entertainment—Drs. J. M. Gorton, Chairman; C. C. Rigby, E. Gallaway.

Special Entertainment for Tri-State Society Meeting—Drs. F. H. Walke, J. E. Slicer, J. L. Ewing.

Memorial Committee—Drs. J. D. Young, Chairman; S. C. Barrow, T. R. Ragan.

CORRECTION

In the last issue by mistake, the name of Dr. J. J. Irwin appeared as having moved to Larose, Louisiana. It should have been Dr. I. J. Boulet.

LOUISIANA STATE MEDICAL SOCIETY.

The Executive Committee of the Louisiana State Medical Society and the Council held a very important meeting in New Orleans on January 20th, 1925, at their domicile 1551 Canal street. There was an unusual attendance at this meeting, and a great many matters of extreme importance were disposed of.

FIFTH DISTRICT MEDICAL SOCIETY.

A meeting of the Fifth District Medical Society was held at Monroe on December 9th, 1924. In addition to having with them Drs. Allen and Seale Harris, there was present also Dr. Oscar Dowling, who had exhibited for the members the "Life of Pasteur." It was shown in the Saenger Theater, complimentary.

The following officers were elected for 1925. President, Dr. C. H. Moseley, Monroe; Vice-President, Dr. R. B. Leavell, Bastrop; Secretary-Treasurer, Dr. P. L. Perot, Monroe; Delegate, Dr. A. E. Fisher, Choudrant; Alternate, Dr. A. G. McHenry, Monroe.

ASSUMPTION PARISH MEDICAL SOCIETY.

The 1925 officers of the Assumption Parish Medical Society are: President, Dr. T. B. Pugh, Napoleonville; Secretary-Treasurer, Dr. Charles Roger, Napoleonville; Delegate, Dr. W. E. Kittredge, Napoleonville; Alternate, Dr. C. S. Roger, Napoleonville.

IBERIA PARISH MEDICAL SOCIETY.

Iberia Parish Medical Society on December 18th, 1924, elected the following officers for 1925: President, Dr. Geo. J. Sabatier, New Iberia; Vice-President, Dr. P. A. Boykin, Jeanerette; Secretary-Treasurer: Dr. W. F. Carstens, New Iberia; Delegate, Dr. Guy A. Shaw, Loreauville; Alternate, Dr. J. N. Pharr, New Iberia.

Dr. Wallace J. Durel, Covington, Louisiana, has been appointed Chairman of the Committee on Medicine and Therapeutics.

ST. TAMMANY PARISH MEDICAL SOCIETY.

The St. Tammany Parish Medical Society held its regular monthly meeting and installation of officers on the 9th inst. at Mandeville, and finished off the evening with a fine banquet as ever tickled the tongue of a gourmet, at Bechac's celebrated restaurant.

It being a business meeting there were no scientific papers. Dr. R. L. Young of Covington was elected a member. Those present were Dr. G. A. Pennington, President; Dr. F. R. Singleton, Vice-President; Dr. H. D. Bulloch, Secretary-Treasurer; Dr. J. K. Griffith, retiring president and Delegate to the State Medical Society; Dr. R. B. Paine, Alternate, and Drs. J. F. Polk, C. A. Farmer, J. F. Buquoi, N. M. Hebert, B. B. Warren, R. L. Young, and A. G. Maylie.

Several invited guests from New Orleans failed to materialize.

The next meeting will be held at Covington on Friday, February 13th, 1925.

LAFOURCHE VALLEY MEDICAL SOCIETY

The quarterly meeting of the Lafourche Valley Medical Society was held by request of the Assumption Parish doctors at Napoleonville on Thursday, November 13th, 1924, at 6 p.m. The following doctors were on the program.

Dr. S. M. D. Clark, New Orleans: Dr. Albert J. Meyer, Dr. J. L. Danos, and Dr. H. S. Smith, Thibodaux; Dr. G. A. Sigur, Lockport; Dr. T. I. St. Martin, Houma, and Dr. T. H. Hamson, Donaldsonville.

A sumptuous banquet was served after the scientific program in the Knights of Columbus Hall, prepared by the Ladies of Napoleonville, Mrs. W. E. Kittredge, of Napoleonville, being at the head of this committee.

UNITED STATES CIVIL SERVICE.

Junior Medical Officer, Assistant Medical Officer, Associate Medical Officer, Medical Officer, Senior Medical Officer, Receipt of applications for these examinations will close on June 30, 1925. They are to fill vacancies in various branches of the Government service.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the Secretary of the Board of U. S. civil-service examiners at the post office or customhouse in any City.

The Health Committee of the League of Nations, in a report to be filed with the Council of the League, a copy of which has just reached this country, announces the plans of the Committee for the standardization of anti-toxins and serums.

Last year agreement was reached on the question of the standardization of anti-toxin for diptheria and it is expected that during the present year the tetanus serum will be standardized. The researches on the sero-diagnosis of blood disease will also be further carried on during the present year.

The Commission for the distribution of the Prize for Cancer study founded by Dr. Sofie A. Nordhuff-Jung, in agreement with the Foundress, has resolved to distribute the Prize from now on only every two years to the Double amount of the sum allotted heretofore, that is One Thousand ($1000) Dollars. The next prize will reach distribution in 1926.

Removals: Dr. Chas. Cox, Weeks Island to New Orleans, La. Dr. E. S. Fulton, New Iberia, to Alexandria, La. Dr. C. H. Potts formerly an interne at the Touro Infirmary is now located in Shreveport, La.

LOUISIANA NURSES' BOARD OF EXAMINERS

The semi-annual examination of the Louisiana Nurses' Board of Examiners was held in New Orleans and in Shreveport, December 15th and 16th.

One hundred and six applicants qualified as registered nurses.

The successful applicants are:

Misses Ernestine Marie Arbour, Florence Helena Berdou, Maria Bertrand, Ann Louise Beyt, Denise T. Beyt, Willie Dee Blackwood, Adele Marie Blanchard, Myrtle Lucille Block, Annie Virginia Blunt, Lillian Mary Boley, Mrs. Mamie McGinty Borck, Annette Elmira Bourdreaux, Charlotte Marie Brown, Gladys Brown, Mrs. Sarah M. Anderson Brown, Mary Lucile Broussard, Mary Rose Callahan, Edna Margaret Capella, Alma Eliza Clark, Mrs. Marie Shelby Clark, Ollye Hunter Clark, Mrs. Amanda Wiley Clooney, Harriette Bessie Corley, Rosie Curtis, Francis Pearl Dalton, Mrs. McCoy Grace Hoffpauir De Ben, Lillian Marie De Larot, Hazel Regina De Laune, Mary Catherine De Metz, Caroline De Valcourt, Laura De Valcourt, Elizabeth M. Doughty, Ruby Amelia Ehrlich, Esther Eleanor Fahrenwald, Lillie Elizabeth Faler, Mrs. Dagmar Albertsen Farrelly, Mrs. Lillia Le Jeune Ford, Mrs. Bernice May Savoy Fuselier, Mrs. Julie Gangloff, Julie Alice Garland, Leola Guess, Mrs. Mary Johanna Green, Martha Gillis, Ruth Marvin Hale, Katherine Rosamond Harper, Pearle Margaret Hebert, Viola Henley, Mildred Dobson Henning, Robbie Hicks, Kate Agnes Holmes, Alice Leone Jennings, Mrs. Edna Catherine Johnson, Myrtle Veronica Jordan, Grace Killingsworth, Eula Lea Kuhn, Ruby Jewel Kuhn, Enola Mary Le Blanc, Odette Marie Lefort, **Cleopatra McCallum**, Mrs. Louise Hebert McGann, Laurie Eloise Mahoney, Anna Velma Malley, Corinne Marie Meudoza, Margaret M. Mernagh, Ethel Michon, Hettie Miller, Mrs. Eva Lockett Mills, Nola Rae Moore, Leola Mae Moses, Daisy Mae Mount, Kathryne Elizabeth Moye, Emma Catherine Needham, Justine M. O'Brien, Lynnie Pearl Paul, Willa Mae Phillips, Beatrice F. Pritchard, Mrs. Pearl Pevey Raby, Mrs. Mary Miller Roache, Marie Lorraine Rogers, Mrs. Claudia Topham Roussel, Bella Samuel, Ola Edna Sawyer, Vivian Elizabeth Shows, Estelle Maude Sones, Violet Sones, Bessie Martha Stringer, Frances Jewell Tillery, Vesta Winona Timm, Betty Tomeny, Estelle Rose Vogt, Deron Waldrum, Mrs. Sara Ella Watkins, Loraine Beatrice Westbrook, Myrtle White, Jennie Bisland Williams, Amy Louise Wilson, Mrs. Frances Lona Witte, Anna Behland Word, Gladys Clara Wright.

Colored applicants: Earline Oberian Denmon, Roberta Cornelia Johnson, Viola Jolicoeur, Katie Madeline Page, Viola Doreatha Pumphrey, Ossie Olach Reed, Aniece Enez Wilson.

The Louisiana Nurses' Board of Examiners is composed of the following members: Dr. John T. Crebbin, president; Miss Julie C. Tebo, R. N., secretary-treasurer; Dr. George S. Brown, New Orleans; Dr. Fred J. Frater, Shreveport; Dr. Robert W. Faulk, Monroe.

MONTHLY MEETINGS IN NEW ORLEANS

The Medical Staff meetings of Charity Hospital are held on the third Tuesday of each month, and the Surgical Staff meetings are held on the third Wednesday of each month in the Reception Room at 8 p.m.

The Eye, Ear, Nose and Throat Hospital meetings are held on the first Monday of each month in the Library at 8 p.m.

The Eye, Ear, Nose and Throat Club meetings are held on the third Thursday of every month in the office of the Orleans Parish Medical Society at 8 p.m.

Hotel Dieu meetings are held on the third Monday of each month in the Nurses' Class Room at 8 p.m.

Mercy Hospital meetings are held on the third Friday of each month at 8 p.m.

Presbyterian Hospital meetings are held on the last Thursday of each month at 8 p.m. in the Out Clinic Building.

Touro Infirmary meetings are held on the third Wednesday of each month at 8 p.m. in the Staff Assembly Room.

INTER-STATE POST GRADUATE ASSEMBLY CLINIC TOUR

Directed by the doctors in State District Medical Associations, this tour of American physicians to Canada, British Isles and France will begin May 17th, 1925, from Chicago.

Officers of the tour are: President, Dr. Chas. H. Mayo, Rochester, Minn.; chairman of the orientation committee, Dr. Addison C. Page, Des Moines, Ia.; Director of the tour, Dr. William B. Peck, Freeport, Ill.; secretary, Dr. Edwin Henes, Jr., Milwaukee, Wis.

The tour will extend over a period of approximately five weeks, and includes the clinics in Toronto, London, Liverpool, Manchester and Leeds. During the early part of June the clinics visited will be in Dublin, Belfast, Glasgow, Edinburgh and Newcastle. Intermingled will be visits and excursions to places of historical and general interest. The latter part of June will be spent in France, particularly attending the clinics in Paris, Lyon and Strasbourg. At each of these places provided in the tour a splendid scientific program has been prepared, with most prominent leaders in the medical profession of the various committees in charge. A series of luncheons and receptions round out a tour which promises to be of great value to those who are fortunate to be able to embrace this opportunity.

On November 14th, 1924, the president, following the unanimous recommendations of the United States Tariff Commission, proclaimed that "to encourage industries in the United States, and for other purposes," the duty on diethylbarbituric acid and its salts, known as Barbital and Barbital-Sodium in this country, and which are chemically

identical with Veronal and Veronal-Sodium, be computed on the American valuation instead of the foreign valuation.

Highest susceptibility to scarlet fever exists from the ages of one to two years, according to the results of tests made with 7,700 normal persons of different ages. Results of these tests are summarized by Dr. Abram Zingher in the American Journal of Public Health.

Dr. John Schrieber, of Monroe, Louisiana, has been appointed chairman of the Section on Public Health and Sanitation for the approaching meeting of the Louisiana State Medical Society.

BOOK REVIEWS

Diseases of the Skin, by Frank Crozer Knowles. Philadelphia, Lea & Febiger, 1923.

I know of no book of five hundred and seventy two pages on Diseases of the Skin which can compare with the book given us by Dr. Knowles; it is wonderfully complete for a book of that size and should answer to a marked degree the requirements of medical students on that subject. The illustrations are numerous, particularly good and well selected. The print is excellent.

H. E. MENAGE

Cancer of the Breast, by L. Duncan Bulkley. Philadelphia, F. A. Davis Co., 1924.

This is a very remarkable volume in many ways. The first half is a very excellent and comprehensive review of the known and suspected facts about the embryology, anatomy, physiology, pathology, diagnosis and prognosis of malignant tumors with especial reference to the breast. It undoubtedly represents wide and discriminating reading by an earnest and intelligent student. This portion may be highly recommended to anyone desiring a brief but thorough study of the subject.

The latter half, devoted to the author's conception of cancer, is the most astonishing collection of faulty logic that the reviewer has ever read. The conception of cancer as a local manifestation of a constitutional disease, is familiar enough, and no doubt as good a case can be made for it as for most other theories on the same subject. That it is a metabolic disorder is a tenable hypothesis. That medical treatment may be best for it may be possible, and that the author's treatment chiefly by diet, is of value, seems amply supported by his collection of cases. It is also true that Columbus discovered America by mistake, and that the discovery was no less important for that reason. But the author's method of supporting his purely empirical treatment by irrelevant conclusions from laboriously marshalled facts, is like a soldier armed with rifle, pistol, trench knife and hand grenade, attacking the enemy with bare fists and magic incantations. The method has been known to achieve the desired result but it offends our sense of fitness in scientific method. I believe that a logician could find here an example of every known fallacy.

For example: In the hands of surgeons, the death rate from cancer is increasing. In the hands of internists the death rate from tuberculosis is decreasing. Therefore internists should treat cancer. Sounds reasonable, doesn't it? So does the Abram's treatment if you are not careful. Take another. In the hands of the internist, the death rate from cardiovascular disease is rapidly increasing (See any actuaries' report). In the hands of the surgeons the death rate from appendicitis has fallen tremendously. Therefore the surgeons should treat cardio-vascular disease.

Let us in fairness state, that the cases reported were carefully studied and treated, and the diagnosis well founded. The results at least as good as the surgeon's best. The author's attitude is not in any way that of a quack, nor does he attempt to discredit the methods to others. There can be no doubting his honesty of conviction nor the thoroughness of his study. The fact that a method is empirical does not of itself bring discredit, but it should not masquerade in the cloak of deductive reasoning.

J. D. RIVES

Cosmetic Surgery, by Charles Conrad Miller. Philadelphia, F. A. Davis Co., 1924.

A primer for face-lifters, and like most primers full of neglected though well known truths.

The author limits his work to the methods of correction of what might be called non-pathologic changes in the face and neck. It is no part of our function to comment on the desirability or ethics of this branch of surgery since it does exist and is much in demand. However, we cannot avoid observing the persistence of the surgeon's inheritance from his legitimate ancestor.

This work presupposes no knowledge of surgery on the part of the reader, and its method of presentation is so elementary as to constitute a devastating criticism of the intelligence and training of persons likely to be interested. Let it be understood, however, that one will search in vain for unsound surgical principles. There is much here that good general and plastic surgeons could learn and practice to advantage. The text is notably free from false claims as to originality as well as to overenthusiastic promises of results. The author sets forth the methods deemed best by himself with no reference to individual origins, but a very definite and clear statement to the effect that only well-known and long established principles of plastic surgery are used, the application of these principles to individual problems being varied to meet the needs of the case.

The work is a clear, simple presentation on technical method with occasional sage comments on men and manners that give a hint of the tolerant philosophy behind the pen. The field seems to be entirely covered but not in an exhaustive manner. Certainly much more extensive remodelling of noses is being done successfully. It seems probable that the author limits himself to the easily performed operations of established efficacy, though this is not stated.

The book is well bound and printed. The illustrations are diagrammatic but clear and effective. They are adequate in number and serve to illuminate the text admirably.

Hypercritical general surgeons are advised to read the conclusions (last chapter) first, and be disarmed. Tyros seeing a road to wealth will do well to ponder the concluding sentence. "So it is the suggestion of the writer that the featural surgeon should not exclude himself from the field of general surgery, for as one grows older one finds more satisfaction in doing operations which cure disease rather than thos which merely satisfy vanity."

J. D. RIVES

A Review of A Text-Book of Surgical Handicraft by J. Renfrew White—New York, The Macmillan Co., 1924.

The author of this volume states in the introduction that it has been compiled for junior medical students.

Careful reading of this book will convince anyone that it is indispensable to a library for ready reference because the author has compiled and placed under one cover material which is difficult to find.

This volume should be in the hand of every medical student. A copy of it should be in the operating pavillion of every hospital, and the druggist would do well to avail himself of its use.

The chapter on asepis and antisepsis is extremely interesting, because of the medical history which it contains. In the chapter of antiseptics we find the author detailing for each antiseptic its nature, methods of preparation, use, advantages and disadvantages.

The chapters devoted to Surgical Material, Bandaging, Hemorrhage and Ligatures are of particular interest. The author begins each chapter with quotation from some outstanding medical authority. Dr. White gives a photograph and a short biographical sketch of the authority quoted. It is of particular interest to us that the chapter on Knots, Ligatures and Sutures is begun by a quotation from Dr. Matas.

It is worthy of note that the author, living in New Zealand, gives credit to so many American works on surgery for suggestions in the completion of his undertaking.

This little volume deserves to be in constant use by surgeons as well as under graduate medical students.

ISIDORE COHN

The Circulatory Disturbances of the Extremities, by Leo Buerger. Philadelphia & London, W. B. Saunders Co., 1924.

This volume is a gem in its field. The author has succeeded in contributing a volume to medical literature which should be welcomed by undergraduates of medicine, as well as those interested in diseases of the peripheral circulation.

It is interesting for the undergraduate, particularly because of the detailed description of methods of examination of cases in which there is a suspected disturbance of circulation, and because of the careful explanation of manifestations of diseases of peripheral circulation.

The chapters devoted to Thrombo Angiitis Obliterans might well form a monograph on the subject. The careful, minute, description of all of the manifestations of this disease, as well as the pathology, including histopathology is classic. This portion of the volume represents the great contribution to medical knowledge by the author.

The remaining portions of the volume are devoted to descriptions of Arteriosclerosis, Reynaud's disease, and the other important causes of Gangrene.

The differential diagnosis of each from the other is set forth in a manner that will clarify many points of doubt in the mind of the surgeon called upon to treat one of these diseases.

Since the indication for treatment in each one varies greatly from the other, every surgeon will benefit himself by careful study of this volume and at the same time he will render better service to these unfortunate patients.

This volume is one of which might be placed along side of Dr. Matas' work in vascular surgery.

As a reference work it should be near at hand for use by all.

ISIDORE COHN

Circulation in Health and Disease, by Carl J. Wiggers. Philadelphia and New York, Lea & Febiger, 1923.

The second edition of this well known work requires no introduction to students of cardiology. The physiology and dynamics of the circulatory apparatus are thoroughly covered as well as the various mechanical means of recording and studying the arterial and venous circulation. The work is highly technical and is, on that account, of value to the practitioner only as a book of reference. The author's method of exposition of the subject likewise makes it rather difficult reading for anybody but the advanced student of cardiology. Many facts and data are presented without any conclusions being drawn by the author who prefers to allow the reader to draw his own. Such a method presupposes a wide knowledge of the subject by the reader and to some extent limits the usefulness of the book to those particularly interested in the subject except as a reference work.

RANDOLPH LYONS

PUBLICATIONS RECEIVED

W. B. Saunders Company, Philadelphia and London: "General Index to Bickham's Operative Surgery," Vols. I. to VI. "Operative Surgery," by Warren Stone Bickham, Vol VI.

The Year Book Publishers,, Chicago: "The Practical Medicine Series," under General Editorial Charge of Dr. Chas. L. Mix, A. M., M. D., Vol. I., General Medicine; Vol. II., General Surgery.

Paul B. Hoeber, Inc., New York: "Practical Lectures, 1923-1924."

MacMillan Company, New York: "The Medical Sciencee in the German Nniversities," translated by Theodor Billroth. "Parasites and Parasitosis of the Domestic Animals," by B. M. Underhill, V. M. D.

J. B. Lippincott, Philadelphia and London: "Bacteria in Relation to Man," by Jean Broadhurst, Ph. D.

Washington Government Printing Office' "Annual Report of the Surgeon-General of the Public Health Service of the United States."